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Discussion Paper No. 612

03/2008

Harvard Law School
Cambridge, MA 02138

DP: 612 JEL: G18, G21, G28, E53, K22, K41

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ABSTRACT

This paper explores the economic and legal causes and consequences of recent difficulties in the subprime mortgage market. We provide basic descriptive statistics and institutional details on the mortgage origination process, mortgage-backed securities (MBS), and collateralized debt obligations (CDOs). We examine a number of aspects of these markets, including the identity of MBS and CDO sponsors, CDO trustees, CDO liquidations, MBS insured and registered amounts, the evolution of MBS tranche structure over time, mortgage originations, underwriting quality of mortgage originations, and write-downs of investment banks. In light of this discussion, the paper then addresses questions as to how these difficulties might have not been foreseen, and some of the main legal issues that will play an important role in the extensive subprime litigation (summarized in the paper) that is underway, including the Rule 10b-5 class actions that have already been filed against the investment banks, pending ERISA litigation, the causes-of-action available to MBS and CDO purchasers, and litigation against the rating agencies. In the course of this discussion, the paper highlights three distinctions that will likely prove central in the resolution of this litigation: The distinction between reasonable *ex ante* expectations and the occurrence of *ex post* losses; the distinction between the transparency of the quality of the underlying assets being securitized and the transparency as to which market participants are exposed to subprime losses; and, finally, the distinction between what investors and market participants knew versus what individual entities in the structured finance process knew, particularly as to macroeconomic issues such as the state of the national housing market.

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*** Babson College, (781) 239-4946, ghu@babson.edu. The authors have benefited from discussions with Tamar Frankel, David Sugerman, and research assistance from Eric Chan, Wallace de Witt, and Johnson Elugbadebo. Professor Ferrell is grateful to the John M. Olin Center in Law, Economics, and Business at Harvard Law School for financial support.

The residential subprime mortgage industry crisis is one of the foremost economic issues facing the United States today. With housing prices high and interest rates low through 2006, millions of households with weak credit histories purchased homes or refinanced existing homes, using adjustable rate mortgage loans designed for high-risk borrowers known as subprime residential mortgage loans. Investment banks securitized these loans into residential mortgage backed securities (RMBS) and collateralized debt obligations (CDOs), selling risk-differentiated tranches to investors. With the rise of interest rates and the decline in housing prices in 2007, as many as two million homeowners have faced or are facing interest-rate resets on loans that will increase their mortgage payment as much as 30 percent. Some cannot or will not be able to pay their higher mortgage obligations and will default. The effects of these defaults and foreclosures are being felt by investors in the RMBS and CDO markets, loan originators, credit appraisers, underwriters, bond rating agencies, bond insurers, and others. In this paper we explore the mortgage securitization market, some of the causes and consequences of the subprime lending crisis, and the impact of these difficulties on various market participants. We investigate the risks that can arise from financial and technology innovations and losses that are uniquely related to correlated events in the setting of the subprime loan market.

The subprime mortgage industry crisis is not solely an economic phenomenon but a legal one as well. It is widely believed that the substantial decrease in the value of asset-backed securities faced by investment banks and other purchasers that held previously rated investment-grade CDOs with subprime exposure, as well as junior or mezzanine tranches of RMBS, will generate substantial, perhaps unprecedented, levels of litigation. The facts so far have been sobering. The percentage of securities class action suit filings has increased by almost 50 percent year over year. The threat of private litigation and its settlement value have been

heightened by recent revelations that the FBI is investigating several major investment banks with respect to the accounting and pricing of various pools of securities in addition to civil investigations already underway by the Securities and Exchange Commission (SEC) and the Attorney Generals of Connecticut and New York. These governmental investigations are important not only in their own right, but also because they might reveal information that could further fuel private class action litigation.

The subprime litigation wave includes the filing of Rule 10b-5 class actions against an extensive list of major financial firms, including Citigroup, Merrill Lynch, Morgan Stanley and UBS AG, as well as against a number of mortgage originators, such as Coast Financial Holdings, Countrywide Financial Corp., IMPAC Mortgage Holdings, New Century Financial, Thornburg Mortgage, and Washington Mutual. Predictably, ERISA class action litigation has been filed against a number of firms, including Citigroup, MBIA, Merrill Lynch, Morgan Stanley, and State Street Corporation. Tellingly, State Street Corporation, which is facing multiple ERISA suits concerning the operation of some of its funds, set aside in the fourth quarter of 2007 a reserve of $618 million to cover legal exposure.

Table 1 provides a summary of the securities class action suits that have been filed to date against investment banks, mortgage originators, bond insurers and credit rating agencies based on subprime losses. The Table summarizes the alleged legal basis for liability (Rule 10b-5 of the Exchange Act of 1934; Section 11 and Section 12(a)(2) of the Securities Act of 1933), the filing date of the complaint and the class period if the action is based on 10b-5. In total, Table 1 covers 136 securities class action suits based on subprime losses (with some complaints being duplicative) against forty-three companies. The complaints for these class actions were obtained

from Bloomberg.[1] Much of this litigation is directly related to the extensive write-offs banks have had to take as a result of subprime losses. The write-offs by banks in 2007 are summarized in Table 2.

Table 1 surely underestimates, however, and most likely substantially underestimates, the extent and impact of the likely subprime litigation. We anticipate three substantial additional sources of litigation: *i*) litigation against companies other than those directly involved in the structured finance market due to losses as a result of subprime mortgage exposure; *ii*) non-class action litigation brought by MBS and CDO purchasers and investment banks; and *iii*) governmental action against various participants in the structured finance process (with agencies like the SEC having greater subpoena powers than private parties and the ability to pursue parties based on an aiding and abetting theories). An example of the first type of subprime litigation would be litigation brought against and by operating companies that invested corporate cash in subprime mortgages as investments and suffered substantial losses as a result. The second category of non-class litigation will include litigation brought by the investment banks against mortgage originators (a subsidiary of Deutsche Bank has already reportedly filed 15 lawsuits against mortgage originators for violations of repurchase agreements); registered MBS purchasers bringing Section 11 and Section 12(a)(2) claims against MBS underwriters for misleading statements in the offering process; and disputes between different CDO tranche holders as to how to distribute the assets of liquidating CDOs. The third category includes a variety of civil and criminal, state and federal investigations, perhaps most importantly the pending investigations into the role played by the due diligence firms responsible for verifying the underwriting quality of securitized mortgages.

[1] We are grateful to Bloomberg for specifically pulling complaints from courthouse records that were not available electronically. We also double-checked our list of subprime class action litigation against the records maintained by the Stanford Securities Class Action Clearinghouse.

An example of the potential for extensive litigation arising out of losses from subprime exposure is the situation of Luminent Mortgage Capital, Inc., a REIT that purchased MBS that resulted in substantial losses. Luminent Mortgage Capital is currently suing Merrill Lynch (and various Merrill Lynch subsidiaries and affiliates) for alleged misrepresentations with respect to the sale of junior MBS tranches as well as HSBC Holdings for allegedly improperly placing too low a value on nine subprime mortgages that a subsidiary of Luminent Mortgage Capital had put up as collateral. Luminent Mortgage Capital, in turn, has five Rule 10b-5 class action suits filed against it for false statements as well as a counter-suit by HSBC Holdings for breach of contract. There is speculation that Luminent Mortgage Capital will be subjected to ERISA lawsuits as well. And Luminent Mortgage Capital is just one of many players in the RMBS and CDO marketplace.

The remainder of this paper is organized as follows. Section I describes the process by which loans to homeowners are securitized and discusses the role of various participants in the mortgage securitization market. Section II discusses the causes and consequences of the current subprime lending difficulties, while Section III explores reasons why market participants may have underestimated risks related to subprime lending. We review the legal issues facing market participants in Section IV, and we summarize our findings in Section V.

I. Residential Mortgage Backed Securitization and Collateralized Debt Obligations

The United States has one of the highest rates of home ownership in the world. Home ownership in the U.S. has risen in recent years, from 64.0 percent in 1994 to 68.8 percent in

2006.[2] In part this increase has been facilitated by aggressive lending standards that have allowed people from a broader economic spectrum to own homes and by the use of mortgage securitization that increased mortgage capital and distributed the risk of loans more broadly. Mortgage-backed securities (MBS) are debt obligations whose cash flows are backed by the principal and interest payments of pools of mortgage loans, most commonly on residential property. In this section we describe the process by which loans are originated, securitized, and sold to investors, a process, depicted graphically in Figure 1, that begins with the origination of homeowners' loans.

A. Homeowners and loan originators

The road to home ownership typically depends on the availability of financing. Lenders establish underwriting guidelines, evaluate prospective homeowners' credit, and make loans. Having done so, lenders generally hold only a fraction of the loans they make in their own portfolios. Most are sold to the secondary market, where they are pooled and become the underlying assets for RMBS.

Individuals with strong credit qualify for traditional mortgages, whereas those with weak credit histories that include payment delinquencies, and possibly more severe problems such as charge-offs, judgments, and bankruptcies qualify for subprime loans. Subprime borrowers may also display reduced repayment capacity as measured by credit scores and debt-to-income ratios or have incomplete credit histories. As can be seen in Figure 2, subprime mortgages are an important part of the overall mortgage market, and the share of subprime mortgages in total mortgage originations has risen over time. In 2001, 8.6 percent ($190 billion) of the more than $2.2 trillion mortgages originated were rated subprime. By 2005, this percentage had risen to 20.0 percent, and over $600 billion subprime mortgages were originated.

[2] Bureau of the Census, U.S. Department of Commerce.

Most of the subprime mortgage loans that have been originated in recent years are ARMs, interest-only mortgage loans (IOMs), and negatively amortizing mortgage loans (NegAmMs) rather than fixed-rate mortgage loans (FRMs). Many of the loans are "2/28" and "3/27" hybrid ARMs. A typical "2/28" hybrid ARM has a low fixed interest rate and mortgage payment (teaser) during the initial two-year period. After two years, the rate is reset every six months for the next 28 years based on an interest rate benchmark (such as the London Interbank Bid Offered Rate, or "LIBOR"). Payments are usually much higher when they are reset at the end of the initial fixed-rate period.

Most subprime loans are made by mortgage banks and mortgage brokers, rather than by commercial banks or other depository institutions. Mortgage banks originate subprime residential mortgage loans and then sell them to investment banks, whereas mortgage brokers originate subprime residential mortgage loans on behalf of investment banks. Independent mortgage companies sell loans for securitization to other financial services firms. Banks and thrifts, which are more highly regulated than mortgage banks and mortgage brokers, deal primarily in lower-priced prime mortgages, selling to government sponsored enterprises (GSEs) such as Fannie Mae and Freddie Mac that securitize conventional conforming loans.[3] Over the past decade, the market shares for loan originators have changed dramatically. Originations moved out banks and thrifts to mortgage banks, brokers, and independent mortgage companies. At the same time, the market consolidated: As of 1990, the top 25 originators made approximately 28 percent of the industry total of roughly $500 billion, whereas in 2005 the top

[3] William Apgar, Amal Bendimerad, and Ren S. Essene, *Mortgage Market Channels and Fair Lending: An Analysis of HMDA Data*, Joint Center for Housing Studies, Harvard University, April 25, 2007, p. 6.

25 originators market share rose to approximately 85 percent out of an industry total of $3.1 trillion.[4]

B. Issuers

MBS sponsors or originators purchase the mortgage loans from loan originators, assemble them into asset pools, and structure them into mortgage-backed securities. After a large enough portfolio of mortgages is pooled, it is sold to a special purpose vehicle (SPV), which is the issuer of the MBS, formed for the specific purpose of funding the loans. Once the loans are transferred to the issuer, there is normally no recourse to the originator. The issuer is "bankruptcy remote," meaning that if the originator goes into bankruptcy, the assets of the issuer will not be distributed to the creditors of the originator.

The SPV issues securities to fund the purchase of the loans. Securities are generally split into tranches differentiated by maturity and credit risk. Tranches are categorized as either senior, mezzanine or subordinated/equity, according to their degree of credit risk. If there are defaults or the mortgages otherwise underperform, scheduled payments to senior tranches take priority over those of mezzanine tranches, and scheduled payments to mezzanine tranches take priority over those to subordinated/equity tranches. Senior and mezzanine tranches are typically rated, with the former receiving ratings of AA to AAA (investment grade) and the latter receiving ratings of A to BBB. The ratings reflect both the credit quality of underlying collateral as well as how much cash-flow protection a given tranche is afforded by subordinate tranches. In recent years, senior MBS represent over 85 percent of the value of a typical pool, whereas mezzanine pieces account for around ten percent of the security and are used primarily in CDOs.[5] The most junior class (often called the equity class) has the highest credit risk and account for about five percent

[4] Id.
[5] Steven Drucker and Christopher Mayer, "Inside information and market making in secondary mortgage markets," Working Paper, January 6, 2008.

of the value in the pool. In some cases the equity class receives no coupon (either fixed or floating), but only the residual cash flow (if any) after all the other classes have been paid. There may also be a special class that absorbs early repayments of mortgages, which is an important source of credit risk. Since any early repayment is passed on to this class, it means the other investors have a more predictable cash flow. Often the sponsor or MBS originator retains the equity class.

As a result of pooling assets and issuing MBS, the SPV structures described above arguably fit under the broad definition of "investment company" as defined in the Investment Company Act of 1940 and, hence, would be subject to the extensive requirements of the Act.[6] These requirements are widely viewed, including by SEC staff, as being inconsistent with the normal operations of SPVs and, hence, virtually all SPVs have been structured so as to enjoy an exemption from the Act. The primary exemption relied upon is Rule 3a-7 of the Investment Company Act, which provides an exemption from the Act if an SPV issues fixed-income securities that, at the time of sale, receive one of the four highest categories of investment quality from a "nationally recognized rating agency" (typically S&P, Moody's or Fitch). Pursuit of this exemption is one reason why it is important for an SPV and the securities it issues, to be structured so that they receive the necessary investment ratings.

The SPV has a trustee whose primary role is to hold all the loan documents and distribute payments received from the loan servicer to the bondholders. Although trustees are typically given broad authority with respect to certain aspects of loans under Pooling and Servicing Agreements, they may delegate authority to servicers, described below.

Between 2001 and 2007, the size of the MBS market grew dramatically, peaking over $2.7 trillion in 2003. The percentage of subprime mortgages securitized (based on dollar values)

[6] See Section 3(a)(1)(A) and 3(a)(1)(C) of the Investment Company Act of 1940.

rose from a low of 50.4 percent in 2001 to 81 percent in 2006.[7] Much of the MBS volume transferred from agency to non-agency sponsors, with agency-sponsored MBS representing less than half of the MBS market in 2005 and 2006.[8] Using data from Securities Data Corporation, Figure 3 indicates that agency-sponsored mortgage-backed securitization peaked in 2003, and virtually all was registered and publicly traded. In contrast, private-label (i.e. non-agency) sponsored mortgage-backed securitization peaked in 2005, and private-label equity-line-of-credit securitization peaked in 2006. Although the private-label 144A market was much smaller than the private-label registered market, it too was robust throughout the period, with private-label sponsored 144A mortgage-backed securitization peaking in 2005 and private-label 144A equity-line-of-credit securitization peaking in 2006.

The biggest sponsors of private-label MBS tend to be investment banks. As shown in Table 2, the MBS industry is relatively concentrated with most deals being structured by one of the top 20 sponsors. Each of the top five sponsors structured at least seven percent of market.

Loans that do not conform to MBS requirements are often packaged into CDOs.[9] Like an MBS, a CDO has a sponsoring organization, such as an investment bank, that establishes an SPV that issues securities, typically multiple tranches differentiated by maturity and credit risk, to raise money to invest in financial assets. Most CDO debt is floating rate off LIBOR and can include short-term debt, such as commercial paper (often called asset backed commercial paper or ABCP). ABCP is also issued against a conduit that holds various CDO tranches, often the senior CDO tranche. ABCP's maturity is quite short, running anywhere from one to 270 days,

[7] *The Subprime Lending Crisis: The Economic Impact on Wealth, Property Values and Tax Revenues, and How We Got Here*, U.S. Congress Joint Economic Committee, October 27, 2007; Data from Inside Mortgage Finance, The 2007 Mortgage Market Statistical Annual, Top Subprime Mortgage Market Players & Key Data, 2006.
[8] Data from Inside Mortgage Finance, Mortgage and Asset Securities Issuance, 2007.
[9] According to the Securities Industry and Financial Markets Association, aggregate global CDO issuance totaled $157 billion in 2004, $272 billion in 2005, and $549 billion in 2006. Available at www.sifma.org/research/pdf/SIFMA_CDOIssuanceData2007q2.pdf.

and is thus generally much shorter than the maturity of the CDO's underlying assets. This difference can create a problem if a CDO or conduit holding CDO tranches has troubled refinancing or rolling the paper. Consequently, CDOs and conduits typically contract with a standby liquidity provider that guarantees liquidity for a fee. Usually either the asset seller or the CDO sponsor retains the most subordinate equity tranche. In addition, CDO sponsors retain many of the most senior tranches for investment purposes. Like the market for RMBS, the market for CDOs has grown dramatically over the past 10 years as has the ABCP market.[10] The growth slowed significantly in 2007, however, as housing prices fell, loan delinquencies rose, foreclosures increased, and the performance of recent-vintage RMBS declined.[11]

The collateral of CDOs can be home loans, RMBS, or even other CDOs (the so-called CDO^2). Many CDOs, although not all, are actively managed, which entails buying and selling CDO assets. For instance, many CDOs merely outline the type of assets that they will purchase and various restrictions on when they will not buy or continue to hold particular assets when raising capital from investors. The party that is entrusted with managing the CDO's assets, subject to these limitations, is the "collateral manager." These limitations are often a function of the conditions under which the CDO must operate to maintain a favorable credit rating from the rating agencies for various CDO tranches. Even if the collateral manager does not have the authority to trade the CDO assets on an on-going basis, many CDOs raise funds prior to the purchase of some of the CDOs assets (the so-called "ramp-up" period). With respect to the CDOs uninvested funds, the collateral manager will have the obligation to invest these funds consistent with the asset strategy of the CDO. In some ways, actively managed CDOs can

[10] Douglas J. Lucas, Laurie S. Goodman, and Frank J. Fabozzi, *Collateralized Debt Obligations*, John Wiley & Sons, Hoboken, NJ, 2006.
[11] Brant Maller and Rick Antonoff, "Spillover effect from subprime collapse; News; As legislation and liability get sorted out, modern real estate lending process faces a big test," *New York Law Journal*, January 14, 2008, 239 (9), p. S6, col. 1.

resemble hedge funds (including the fact that the purchasers of CDO interests are not retail investors).

CDOs are often designed to meet specific investor needs. Investors can specify the desired maturity and credit risk characteristics of securities, which results in more highly-tailored, but less liquid securities than might otherwise be available. The information exchange and time necessary to confer with investors in many instances precludes them from being publicly-tradable on registered exchanges or markets. Investors must therefore rely on dealers to execute trades.

C. Collateral appraisers

MBS and CDO sponsors typically hire firms, known as collateral appraisers or "due-diligence firms," to review and verify the quality of loans sold to SPVs. These reviews evaluate the credit and collateral risks of the loans in the pool and verify the information provided by loan originators to MBS sponsors. Reviews include verifying a borrower's identity, place of residence, and employment status. They typically review note, mortgage riders, title, and mortgage insurance details and may include a property appraisal, as well as a review of the loan originators' property and closing procedures. The information gathered by these firms, as the legal discussion will emphasize, will likely play an important role in much of the subprime litigation. Collateral appraisers in 2007 included Clayton Holdings, First American, LandAmerica Financial Group, and Stewart Information Services Corporation.

D. Sources of credit enhancement

The creditworthiness of MBS and CDOs are typically credit enhanced, meaning that their credit risk is reduced below the credit risk of the asset pool. Credit enhancement is designed to

absorb all or a portion of credit losses, thereby increasing the likelihood that investors receive contractual cash flows and raising the securities' credit ratings.

Credit enhancement can either be internal or external. Internal sources of credit enhancement include but are not limited to providing for "excess" interest; including a spread or reserve account that guarantees that funds remaining after expenses such as principal and interest payments, charge-offs, and other fees have been paid are available for use if the SPV's expenses are later greater than its income; over-collateralization; and structuring transactions to include subordinated classes of securities that absorb cash-flow shortfalls. CDOs are structured such that the cash flows of the assets are sufficient to cover the interest and principal payments of tranches with prescribed levels of certainty. These levels are based on the par value of the assets in a CDO that are not in default relative to the par value of a given tranche's securities. CDOs can also establish advance rates that limit the debt that can be borrowed against particular assets. CDOs value assets regularly to ensure adequate assets. If there is a shortfall, a CDO must either sell assets or the equity holders must contribute cash to prevent the CDO from liquidating.

External sources of credit enhancement include third-party letters of credit, repurchase agreements that require loan originators to buy back from SPVs loans that become seriously delinquent or go into foreclosure within a specified time, and bond insurance. In this regard, it is worth noting that standby liquidity arrangements for CDOs and ABCP conduits do not necessarily provide insurance against credit risk *per se*, but rather provide insurance against liquidity risk; that is, the risk of not being able to roll over the commercial paper.

Bond insurance is an important source of credit enhancement. Bond insurance is a commitment by an insurance company to make contractual payments should the issuer of the bond be unable to do so. Historically, bond insurers insured primarily municipal bonds, but

began entering the structured finance market in the 1990s. In 2006, insurers wrote $606 billion of new coverage, with a net par value of insurance outstanding of $2.4 trillion by the end of the year.[12] The largest insurers of structured finance products in 2007 were MBIA Insurance Corporation, Ambac Assurance Corporation, and Financial Security Assurance Inc., a subsidiary of the Belgian-French bank Dexia. Insurance provided on 2006 and 2007 MBS issuances, broken down by bond insurer, is provided in Table 3.

E. Credit rating agencies

Credit rating agencies, such as Standard & Poor's, Moody's, and Fitch, assess the creditworthiness of obligors with respect to specific financial obligations. The agencies take into consideration the cash-flow risk of the underlying assets and the creditworthiness of guarantors, insurers or other forms of credit enhancement on the obligation.[13] In some, but not all instances, credit rating agencies apparently reviewed the reports or summaries of reports of due-diligence firms in evaluating credit risk.

F. Investors

Hedge funds, life insurers, pension funds, mutual funds, and wealthy individuals buy RMBS and CDOs. In certain instances, institutional bond buyers are subject to legal limitations that permit them only to buy investment-grade or AAA-rated debt. For ERISA fiduciaries, who must "use care, skill, prudence, and diligence" in the course of investing plan assets,[14] purchasing unrated RMBS and CDO securities runs the legal risk that these instruments will be deemed to be imprudent. Moreover, if an SPV issues securities that are deemed to be "equity," then the mortgages will as a general matter be deemed to be part of the "plan assets" with the

[12] "Credit FAQ: The Interaction Of Bond Insurance And Credit Ratings," Standard & Poor's, December 19, 2007. Available at www2.standardandpoors.com/portal/site/sp/en/us/page.article/3,1,1,0,1148450123839.html.
[13] Id.
[14] 29 U.S.C. 1104(a)(1)(B).

legal result that if an investment bank is deemed to be an ERISA fiduciary, they cannot act as sponsor of the SPV (as this would arguably constitute a prohibited "self-dealing" transaction barred by ERISA). One way to avoid the label of "equity," thereby removing a potential bar from an investment bank acting as a sponsor of a SPV, is to obtain an investment-grade rating on the MBS. The importance of obtaining "debt" (rather than "equity") status is primarily an issue for CDOs (which are almost never registered), as the Department of Labor's regulations exempt registered securities (which MBS typically are) from this bar on acting as sponsor and ERISA fiduciary. Another way to avoid the bar, often used by CDOs, is to ensure that no more than 25 percent of purchasers of CDO equity are ERISA plans (in conjunction with certain specified benefit plans).

The advent of investment-grade MBS and CDOs dramatically changed the investment opportunities of many pension funds. Before investment-grade MBS and CDOs, these institutions were largely precluded from investing in real estate. Investment-grade MBS and CDOs allowed them to have in real estate exposure in their portfolios while limiting credit risk (although the availability of CDOs is still somewhat restricted given the utilization of the less than 25 percent test by some CDOs). Mortgage-loan securitization permitted real estate investments to be classified as passive rather than active, and to be considered traditional rather than alternative investments.[15]

G. Servicers

Servicers are hired to collect mortgage payments from borrowers and pass the payments less fees (including guarantee and trustee fees) through to trustees, who then pass payments on to investors that hold the MBS. Servicers can affect the cash flows to investors, because they

[15] Brant Maller and Rick Antonoff, "Spillover effect from subprime collapse; News; As legislation and liability get sorted out, modern real estate lending process faces a big test," *New York Law Journal*, January 14, 2008, 239 (9), p. S6, col. 1.

control collection policies, which influence the proceeds collected, the charge-offs, and the recoveries on loans. Any income remaining after payments and expenses is usually accumulated in reserve or spread accounts or returned to sellers. A servicer is often a loan's originator, because servicers need expertise that is similar to that needed for loan origination. If the loan originator is the servicer, it has even more developed financial incentives to ensure that loan repayments are paid to the SPV and subsequently distributed to investors. The due-diligence firms, pursuant to Item 1122(d) of Regulation AB, often attest to the procedures created to ensure compliance with the terms of the servicing agreement in the MBS registration statement.

II. Crisis in the Subprime Lending Market

From 1997 to the middle of 2006, nominal U.S. housing prices rose by an average of 7.5 percent a year, whereas real U.S. housing prices increased by an average of 5.0 percent a year.[16] As shown in Figure 4, the annual rate at which housing prices increased accelerated between 2001 through 2005.

Rising housing prices and the availability of ARMs persuaded many potential homeowners with marginal incomes, limited net worth, and poor credit histories to buy or refinance their homes. In some instances, homeowners, knowing that they could not service their loans from their income, still bought homes, anticipating that they could quickly flip their homes for a profit or refinance with accumulated equity. The demand for home financing by borrowers with weak credit histories and the specter of additional fees for mortgage originators from an expanded pool of borrowers resulted in some mortgage originators lowering their underwriting standards. As depicted in Table 4, the share of loans originated for borrowers unable to verify

[16] *Irrational Exuberance*, 2nd Edition, 2005, by Robert J. Shiller, Figure 2.1 as updated by author.

information about employment, income or other credit-related information ("low-documentation" or "no documentation" loans) increased from 28 percent to more than 50 percent, and borrowers' total debt payments rose relative to income. At the same time, the share of ARM originations on which borrowers paid interest only (no principal) increased from zero to more than 22 percent. ARMs' share of the subprime market increased from about 73 percent to more than 91 percent.

Evidence is now mounting that at least some mortgage bankers and mortgage brokers may have submitted false appraisals and financial information to qualify otherwise unqualified households for subprime mortgage loans. Others purportedly did not document and verify the income, net worth, and credit history of subprime mortgagers. According to an analysis by Fitch of a small sample of early defaults from its 2006 Fitch-rated subprime RMBS, as much as one-quarter of the underperformance of the 2006 vintage of subprime RMBS may have resulted from inadequate underwriting and fraud.[17] Fitch concludes in its report that there was: "apparent fraud in the form of occupancy misrepresentation; poor or a lack of underwriting relating to suspicious items on credit reports; incorrect calculation of debt-to-income ratios; poor underwriting of 'stated' income loans for reasonability; and substantial numbers of first-time homebuyers with questionable credit/income."[18] Consistent with these findings are results found by BasePoint Analytics LLC, a fraud analytics and consulting firm. BasePoint analyzed over 3 million loans originated between 1997 and 2006 (the majority being 2005–2006 vintage), including 16,000 non-performing loans that had evidence of fraudulent misrepresentation in the original applications. Its research found that as much as 70 percent of early payment default loans

[17] *The Impact of Poor Underwriting Practices and Fraud in Subprime RMBS Performance*, Fitch Ratings Ltd., November 28, 2007. Available at www.americansecuritization.com/uploadedFiles/Fitch_Originators_1128.pdf.
[18] Id.

contained fraud misrepresentations on the application.[19] The New York Attorney General's office is investigating loan originators' appraisals, and has filed suit against real estate appraiser First American Corporation and its subsidiary eAppraiseIt for allegedly colluding with the loan originator, Washington Mutual, to inflate appraisal values.[20]

The gatekeepers to detect loan-origination frauds or lax underwriting standards are the due-diligence firms that review and verify loan information and loan-originator policies and procedures. Several of these firms are currently under investigation by the New York and Connecticut Attorney Generals' offices and the SEC. Linked to these investigations are allegations that some MBS sponsors may have ignored or withheld information about the credit risks of the mortgage pools and may have even pressured due-diligence firms to overlook credit issues on loans. Government officials are investigating whether MBS and CDO sponsors failed to disclose information about high-risk loans, known as exceptions, that failed to meet credit standards to credit-rating agencies and investors. Deutsche Bank, for instance, underwrote $1.5 billion of New Century mortgages in 2006 that included a "substantial" portion of "exceptions." According to the *New York Times*, these loans suffered from defaults and delinquencies.[21] The number of loans reviewed by due-diligence firms fell from about 30 percent in 2000 to five percent by 2005.[22] Even with respect to loans reviewed, due-diligence firms encountered obvious challenges in reviewing loans that lacked the standard documentation or, indeed, any documentation. In assessing these practices, one must bear in mind that these "exception" loans were often purchased at discount to face values and, in turn, sold to the SPV by the investment

[19] *Broker Facilitated Fraud: The Impact on Mortgage Lenders*, BasePoint Analytics, 2006.
[20] The People of the State of New York v. First American Corporation and First American Eappraiseit (Supreme Court of the State of New York, County of New York)
[21] Vikas Bajaj and Jenny Anderson, "Inquiry focuses on withholding of data on loans," *New York Times*, January 12, 2008, p. A1.
[22] Id.

bank at a discounted value. Whether the market discount on the "exception" loans or other loans being extended to subprime borrowers, reasonably reflected the *ex ante* probability of losses from defaults is an issue that will be discussed further in Section 4.

By mid-2006, housing prices began to decline nationally, dropping by about 1.5 percent between 2006 and 2007. Although this decline seems small, some markets were hit more than others. Home sales fell as well, as shown in Figure 5. Interest rates increased, and at the time of this writing more than 2 million homeowners face interest-rate resets on their mortgages.[23] With higher interest rates, homeowners with ARMs face mortgage payments that may be as much as 30 percent higher than their current payment,[24] an amount many cannot afford. In the past, when housing prices rose, ARM borrowers sold or refinanced their homes to pay off their loans before they reset to unaffordable rates. But given flat or declining housing prices, homeowners' options have dwindled and many are delinquent in their payments or in default. Using data from the Mortgage Banker's Association, the General Accountability Office (GAO) found that ARMs experienced relatively steeper increases in default and foreclosure rates compared to fixed-rate mortgages and accounted for a disproportionate share of the increase in the number of loans in default and foreclosure. Fitch also found the delinquency and foreclosure rates of subprime ARMs have increased sharply, and it expects them to continue to rise.[25]

Whereas many outstanding subprimes are ARMs, there are many other subprime borrowers who are also at high risk of default. Several studies of subprime mortgages show that

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[23] C. Cagan, *Mortgage Payment Reset: The Issue and the Impact*, First American Core-Logic, 2007 estimates that 2.17 million subprime ARMs will have their first reset between 2007 and 2009. Available at www.facorelogic.com/uploadedFiles/Newsroom/Studies_and_Briefs/Studies/20070048MortgagePaymentResetStudy_FINAL.pdf. pp. 42-43

[24] Id.

[25] *The Impact of Poor Underwriting Practices and Fraud in Subprime RMBS Performance*, Fitch Ratings Ltd., November 28, 2007. Available at www.americansecuritization.com/uploadedFiles/Fitch_Originators_1128.pdf and *The Subprime Lending Crisis: The Economic Impact on Wealth, Property Values and Tax Revenues, and How We Got Here*, U.S. Congress Joint Economic Committee, October 27, 2007; Data from Inside Mortgage Finance, The 2007 Mortgage Market Statistical Annual, Top Subprime Mortgage Market Players & Key Data, 2006.

cumulative delinquencies and foreclosures have been quite high. Using data on subprime mortgages originated between 1998 and the first three quarters of 2006, Schloemer, Li, Ernst, and Keest (2006) estimate cumulative foreclosures of 2.2 million, with losses to homeowners of $164 billion.[26] This estimate is probably low, given housing prices declined in 2007 perhaps more than the study's authors might have anticipated when estimates were made. Using data from the Mortgage Banker's Association and Moody's, the GAO has found defaults and forecloses to be rising overall, with the largest share being subprime: Subprime loans comprise less than 15 percent of loans serviced, but about two-thirds of the overall increase in the number of mortgages in default and foreclosure from the second quarter of 2005 through the second quarter of 2007.[27]

By late 2006, investment banks reduced their purchases of subprime mortgage loans from loan originators, and some banks and larger mortgage lenders tried to enforce repurchase agreements from previous deals, requiring loan originators to buy back troubled mortgages originated in 2005 and 2006.[28] Because some originators were thinly capitalized, they faced financial distress. By the end of 2007, more than 25 subprime mortgage originators, including New Century Financial Corp. and American Home Mortgage Investment, had filed for bankruptcy. Bank of America recently announced it was buying Countrywide Financial, which had fallen on hard times. Ameriquest Mortgage Co. has stopped taking mortgage applications and has numerous lawsuits pending. A number of originators are under investigation for fraud, predatory lending practices, and other illegal acts.

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[26] Ellen Schloemer, Wei Li, Keith Ernst, and Kathleen Keest, *Losing Ground: Foreclosures in the Subprime Market and Their Cost to Homeowners*, Center for Responsible Lending, December 2006.

[27] Home Mortgage Defaults and Foreclosures: Recent Trends and Associated Economic and Market Developments, Briefing to the Committee on Financial Services, House of Representatives, GAO-08-78R, October 10, 2007.

[28] Carrick Mollenkamp, James R. Hagerty, and Randall Smith , "Banks go on subprime offensive --- HSBC, others try to force struggling smaller players to buy back their loans," *Wall Street Journal*, March 13, 2007, p. A3.

Over the summer of 2007, unanticipated delinquency and default rates on subprime residential mortgages caused market participants to re-evaluate the credit risk inherent in subprime RMBS and CDOs.[29] The ABX-Home Equity Index (BBB-credit rating), a widely used indicator of investors' estimation of the risk of funding subprime mortgage loans through secondary markets, fell from 97.47 in January 2007 to 31.96 in August 2007.[30] Moody's and other credit rating agencies began downgrading securities. For example, by September of 2007, Moody's had downgraded about $25 billion, or roughly five percent of the $460 billion of subprime MBS it rated in 2006. In comparison, Moody's had only downgraded 2.1 percent by dollar volume in the subprime RMBS sector for the combined 2002–2006 time period, and one percent by dollar volume for all of RMBS.[31]

Downgrades of RMBS and CDOs raised fears among credit-market participants about the risk exposure in various financial institutions to subprime residential mortgage CDOs. The result has been twofold. First, investment banks have had to write-off or sell unwanted inventories of CDOs at depressed prices. Banks' inventory of debt typically includes *i*) debt they only have because they have not yet sold it to a structured investment vehicle or it is a remnant of an already completed securitization; *ii*) debt that was part of a structured investment vehicle that was consolidated onto the banks' balance sheet for some reason; and *iii*) debt held as a result of proprietary trading. As documented in Table 2, many underwriters, including Merrill Lynch and Citigroup, have reported huge losses tied to subprime mortgages. What is not known is how many securities remain on their balance sheets that may need to be written down even further in

[29] Testimony of Michael Kanef, Group Managing Director, Moody's Investors Service, Before the United States Senate Committee on Banking, Housing and Urban Affairs, September 26, 2007.
[30] In using the ABX index, however, one must keep in mind how the index is constructed and its limitations. For example, the ABX index, by its nature, does not reflect the various waterfall features inherent in CDOs tranche structures.
[31] Testimony of Michael Kanef, Group Managing Director, Moody's Investors Service, Before the United States Senate Committee on Banking, Housing and Urban Affairs, September 26, 2007.

the future. According to UBS analyst Philip Finch, "writedowns for collateralized debt obligations and subprime related losses already total $150 billion. That may rise by a further $120 billion for CDOs, $50 billion for structured investment vehicles, $18 billion for commercial mortgage-backed securities, and $15 billion for leveraged buyouts."[32] Second, institutional investors such as pension funds that can only invest in highly rated securities have had to sell and may continue to need to sell securities that have been downgraded because of ERISA, other legal requirements, and their own stated investing criteria. This selling in turn may cause bond values to fall even further, resulting in investment banks writing down the value of securities on their balance sheets even further. A lack of liquidity or market depth appears to be furthering the pricing dynamic and writedowns.

Since the end of 2007, bond insurers have also begun to suffer. The top seven insurers "enhance the credit of some $2 trillion worth of debt securities held by investment banks, pension funds, mutual funds, and other investors around the globe."[33] At this time, many of the bond insurers' financial strength ratings have been affirmed, but negative outlooks have been assigned. The financial strength ratings on ACA Financial Guaranty Corp., Ambac Financial Group, and Financial Guaranty Insurance Co. have all been lowered. Without an AAA rating, issuers are unlikely to use these firms to insure securities, further undermining the insurers' financial strengths. As bond insurers' credit ratings fall, so too will the ratings of the securities they have backed. If securities' ratings fall far enough, pension funds and other investors that have to hold highly rated securities may need to sell them, creating a glut in the market and further downwards price pressure. This cycle could mean additional write-offs for investors and investment banks.

[32] Poppy Trowbridge, "Banks at risk from $203 billion writedowns, Says UBS," Bloomberg.com, 2/15/08.
[33] Tomoeh Murakami Tse, "Insurer of bonds loses top rating," *The Washington Post*, January 19, 2008, p. D01.

III. What Went Wrong?

The question then is, how could the subprime-lending crisis have happened? At this time, there are perhaps more hypotheses than answers.[34] In part the answer involves the experience or lack thereof of market participants with this particular underlying asset class and with what were perhaps unanticipated declining loan underwriting standards. The credit risks of the pools of mortgages that included subprime loans, especially hybrid ARMs, were different than the credit risks of many of the mortgage pools previously securitized. It appears borrowers may have been qualified to borrow money based on low teaser rates in the early years of loans, rather than higher rates in later years, and that loan originators may have waived minimum down payments, reducing homeowners' equity. In addition, the mix of mortgages underwritten, which included a higher percentage of ARMs than in the past, had greater exposure to key risks, including interest rates and housing prices and was supported by persons with limited resources. Between 2001 and 2006, the percentage that ARMs comprised of the total subprime MBS rose from 60.8 percent to 74 percent.[35] These changes, coupled with lower underwriting standards, may not have been fully understood by market participants. The market had limited experience understanding the credit risks of such loans and their high representation in MBS was new to the industry.

Other risks, created by changing origination and appraisal policies, may also have contributed to the problem. For example, loan originations shifted away from depository institutions to mortgage brokers and firms specializing in loan originations. These originators, in

[34] Steven L. Schwarcz, "Protecting financial markets: Lessons from the subprime mortgage meltdown," Duke Law School Legal Studies Paper No. 175, November 2007. Available at SSRN: http://ssrn.com/abstract=1056241.
[35] Sandra Thompson, Director of the Division of Supervision and Consumer Protection, Federal Deposit Insurance Corporation "Mortgage Market Turmoil: Causes and Consequences," Testimony before the US Senate Committee on Banking, Housing, and Urban Affairs, March 22, 2007 ; Data from LoanPerformance.

contrast to banks and thrifts, tended to have more focused financial incentives, including fees and yield-spread premiums, to close as many loans as possible at terms favorable to lenders.[36] Other structural changes in the residential mortgage origination industry may have contributed to lower credit standards and permitted fraudulent loan underwriting. Mason and Rosier (2007) note the impact of increasingly automated valuation and underwriting systems.[37]

These changes may have been masked to many market participants by the low interest rates and high housing prices through mid-2006 that staved off loan delinquencies and foreclosures. According to Fitch Managing Director Diane Penndel, "during the rapidly rising home price environment of the past few years, the ability of the borrower to refinance or quickly re-sell the property prior to the loan defaulting masked the true risk of these products and the presence of misrepresentation and fraud." So although loan quality may have been declining throughout the 2001-2006 period, loan performance did not immediately deteriorate. In fact, aggregate delinquency and foreclosure rates for subprime loans *declined* during 2001-2005.[38] Similarly, subprime mortgages originated during 2001-2005 have performed *better* than those originated in 2000.[39] However, when house prices fell and mortgage payments rose due to resets, borrowers' financial weakness became apparent. Noticeably higher delinquency rates began to appear for loans originated in 2006 and 2007.

In part the answer may also involve the experience or lack thereof of market participants with RMBS and CDOs that have somewhat different structures, are more complex, and less transparent than in the past. RMBS, for example, have changed dramatically over time. In

[36] *Broker Facilitated Fraud: The Impact on Mortgage Lenders*, BasePoint Analytics, 2006.
[37] Joseph R. Mason and Joshua Rosner, "How resilient are mortgage backed securities to collateralized debt obligation market disruptions?" Working Paper, February 15, 2007.
[38] *The Subprime Lending Crisis: The Economic Impact on Wealth, Property Values and Tax Revenues, and How We Got Here*, U.S. Congress Joint Economic Committee, October 27, 2007; Data from Mortgage Bankers Association.
[39] Id.

addition to holding more complex collateral, private-label RMBS deals, as shown in Figure 6, have increased in size over time, peaking in 2005. This increase in average size was accompanied by an increased likelihood of multiple bookrunners, which may have arisen as a way to better share the risk of larger deals. At the same time, the average number of tranches for these transactions decreased over time from a high of 11.9 in 1999 to 2.18 at the peak of the market in 2005. Not surprisingly, the main tranche of private-label MBS offerings in 1999 comprised 20 percent of total offering principal, whereas it was 91 percent in 2005. Similar patterns exist for agency-sponsored RMBS and 144A deals. The reduction in MBS-structure complexity may have arisen in part as a response to the development of highly customizable CDOs. RMBS may have catered in the past to the needs of investors for tailored duration and risk exposures. With the rise of CDOs, RMBS may have not needed to fulfill this demand. In contrast to RMBS, CDOs have more tranches than ever before, and tranches are increasingly complex with interest-only and principal-only strips and other difficult-to-value securities.[40] In addition, the credit risk of the underlying assets is increasingly opaque to market participants removed from the actual loan underwriting and verification process. By purchasing securities that distribute risk more broadly, investors must rely on information produced and verified by third parties, who in turn rely on information produced further down the chain. A compromise in quality at any point in the chain can result in unanticipated risks for market participants further up it. CDOs especially have experienced substantial changes in the last eight years in terms of asset distribution and transaction structure.[41] Although it is tempting to point a finger at MBS originators as a contributor to security complexity and opacity, it is difficult to believe that the

[40] Joseph R. Mason and Joshua Rosner, "How resilient are mortgage backed securities to collateralized debt obligation market disruptions?" Working Paper, February 15, 2007.

[41] Jian Hu, "Assessing the Credit Risk of CDOs Backed by Structured Finance Securities: Rating Analysts' Challenges and Solutions," NMI, August 31, 2007. Available at SSRN: http://ssrn.com/abstract=1011184.

industry would have chosen to keep securities on their books that would later be written down by more than $130 billion if it had known the inherent risks.

A final answer may be the market did not fully anticipate the probability or effect of correlated market events or the very small probability of an extremely negative outcome. So, for example, SPVs wrote repurchase agreements to protect against mortgage fraud and defaults. That protection, however, is of limited value if many repurchase agreements are exercised and loan originators declare bankruptcy. Similarly, securities were insured against shortfalls of cash flow, but such guarantees are not very useful if the credit ratings of insurers are downgraded or they go bankrupt. Consistent with this thesis, Mason and Rosier (2007) suggest that credit-rating models may underestimate the correlation of defaults and hence understate risk.[42] In turn, MBS sponsors may not have fully appreciated the probability or impact of bond insurer downgrades on investor sales and the subsequent effect on market liquidity and bond prices.

Another potential source of correlation may have been in the structuring of CDOs tranches to garner investment-grade ratings. Once a CDO's senior tranche is structured so as to receive an investment-grade rating, other CDOs may mimic that structure.[43] If that structure has some risk that is not fully understood by the rating agencies or if some information is not disclosed to or understood by investors or the rating agencies, the same weakness or deficiency will likely be repeated by a large number of CDOs. This herding may result in correlated downgrades later. These types of correlations, whereby a small error aggregates up to a substantial problem, can result in what is now known as a "black swan." According to Nassim Taleb, the author of *The Black Swan*, finance is an area that's dominated by black swans –rare

[42] Joseph R. Mason and Joshua Rosner, "Where did the risk go? How misapplied bond ratings cause mortgage backed securities and collateralized debt obligations market disruptions," Working Paper, May 2007.
[43] Peter Tufano, "Financial innovation and first mover advantages", *Journal of Financial Economics*, 1989, 25, pp. 213-240.

events that have extreme impacts that can be and are usually explained away after the fact. "The tools we have in quantitative finance do not work in what I call the `Black Swan' domain…people underestimate the impact of infrequent occurrences. Just as it was assumed that all swans were white until the first black species was spotted in Australia during the 17th century, historical analysis is an inadequate way to judge risk."

IV. The Legal Issues Raised by the Subprime Losses

Needless to say, there are a number of different parties adversely affected by the losses created by the decline in the value of subprime mortgages that are, or are likely, to bring legal claims seeking to recover some of these losses. The discussion will begin by discussing possible claims by CDO and MBS purchasers. After this, possible issues facing plaintiffs bringing the various class actions documented in Table 1 will be discussed, including the various Rule 10b-5 class actions and ERISA claims. Finally, the discussion will end by briefly addressing some of the litigation issues facing the credit rating agencies.

A. Claims by CDO purchasers

Much of the substantial losses suffered by investors with exposure to subprime mortgages were purchasers of CDOs in which the underlying asserts were MBS for which the collateral in the SPV was, in turn, subprime mortgages. The losses, not surprisingly, were particularly severe for those who purchased the junior or mezzanine CDO tranches. There were also very substantial losses suffered in the value of ABCP issued against conduits holding various CDO tranches, including the senior tranches. In assessing the potential causes of action these CDO purchasers

might have, it is important to bear in mind a couple basic features of the CDO market. Most importantly, CDOs, in sharp contrast to MBS (which might well constitute the collateral held by the CDO), are virtually never registered. Indeed, not only are CDOs unregistered, but also the data on CDOs and CDO structures that is publicly available is quite sparse.

Rather than going through a registration process, CDO interests are sold to investors in Rule 144A offerings. As a result CDO purchasers are typically not retail investors, but are rather very large institutional investors. This pattern is a function of the fact that for an offering to be exempt under Rule 144A, the purchasers (and, indeed, the offerees) must be "qualified institutional buyers" (QIBs). QIBs include investors such as pension plans, hedge funds, investment banks, and municipalities. Hedge funds, in particular, are reported to have been major purchasers of CDOs, including the riskier CDO tranches, with subprime exposure. The fact that CDO interests are issued pursuant to 144A means that CDO purchasers will be unable to bring a Section 11 claim under the Securities Act of 1933 against the issuers of CDOs as there is simply no registration. Nor can CDO purchasers bring Section 12(a)(2) actions under the Securities Act of 1933 for misleading disclosures in communications made during CDO sales processes. Communications made in private offerings (such as a Rule 144A offering), under the Supreme Court's decision in *Gustafson v. Alloyd Co.*, 513 U.S. 561 (1995), are not "by means of a prospectus or oral communication," which is the necessary prerequisite to having a Section 12(a)(2) cause of action. Whereas CDO purchasers will have neither a Section 11 nor a Section 12(a)(2) cause of action, the CDO issuer itself, as a purchaser of MBS, could theoretically bring a suit pursuant to Section 11 against an SPV that issued a registered MBS or the underwriter of the MBS for any misleading statements in the registration statement as well as for any

misleading statements made in communications during the MBS offering pursuant to Section 12(a)(2).

The unavailability of the most attractive causes-of-action under the Securities Act of 1933 leads naturally to the question of whether there are possible contractual claims that can be brought by CDO purchasers. The "subscription agreements" pursuant to which purchasers agree to buy CDO interests typically have very little, if anything, in the way of representations or warranties. This deficit will likely make it difficult for a CDO purchaser, at least with respect to a typical subscription agreement, to bring a claim based on the purchase agreement.

Besides the subscription agreement, however, there is also the indenture agreement (most of which are governed by either New York or British contract law), which governs the collection and distribution of the CDO's funds among the various CDO tranches. The CDO trustee is the party that is responsible under the indenture agreement for ensuring compliance with the terms of the indenture agreement. Table 5 documents the identity of CDO trustees for 2006-2007.[44] It is quite possible that holders of the more junior or mezzanine tranches, perhaps hedge funds that wish to limit their losses, will argue that some of the proceeds of the CDO under the terms of the indenture agreement belong to them; an interpretation that obviously will be resisted by the holders of the more senior CDO tranches. Indeed litigation of this type has already been filed by Deutsche Bank, as trustee of a CDO indenture agreement, seeking judicial resolution of a dispute between various CDO tranche holders over how CDO proceeds should be distributed.[45] These disputes will arise when, according to the terms of the CDO indenture agreement, there is a "default" that triggers an obligation on the part of the trustee to distribute whatever assets are

[44] The Table is based on data presented in *Asset-backed Weekly Update* (January 18, 2008). We are grateful to *Asset-backed Weekly* for provided us with a free subscription to their publication.
[45] See, e.g., Complaint filed in *Deutsche Bank Trust Company v. Lacrosse Financial Products LLC*, Supreme Court the State of New York County of New York (December 3, 2007).

held by the CDO to the CDO tranche holders. Table 6 documents the CDOs that are currently on the path to liquidation, while Table 7 documents the CDO sponsors by number of CDO defaults.[46] These contractual disputes are likely to prove quite complex given that the provisions governing the distribution of CDO funds can be quite intricate due to the waterfall structures that are typically in place. One possible source of elucidation of the parties' intended meaning of various contractual provisions governing distribution of the CDO's proceeds are the computer simulations, generated under various scenarios or assumptions, of the return various holders of the CDO tranches would hypothetically enjoy. Such computer simulations are typically provided to QIBs during the marketing of CDOs.

There is yet another potential source of litigation from CDO purchasers and that is against the collateral manager of the CDO. Litigation of this type is already occurring in the United Kingdom. One case, for instance, involved HSL Nordbank, which had invested in investment-grade tranches of a CDO called Corvus for which Barclays Capital was the collateral manager (Barclays also sponsored and marketed Corvus). HSL Nordbank claimed that its investment, as a result of the original assets of Corvus being sold and replaced with poorly performing assets, was thereby rendered largely worthless. HSL Nordbank brought a number of claims against Barclays, including claims that Barclays had not adequately disclosed the risks of purchasing the CDO interests, breached its duty of care in the management of Corvus as collateral manager, and, finally, that Barclays had inflated the value of the CDO's assets in reports to Corvus' investors. The HSL Nordbank lawsuit settled.

What form is the type of claims brought by HSL Nordbank likely to take in the United States? With respect to claims concerning actions by the CDO collateral manager, such as a claim that the collateral manager improperly substituted existing CDO assets with poorly

[46] The Table is based on data presented in *Asset-backed Weekly Update* (January 18, 2008).

performing assets, one possible approach would be to argue that the collateral manager is an ERISA fiduciary with respect to any CDO pension plan purchasers. It is already apparent from the litigation filed so far, that plaintiffs will aggressively deploy the concept of ERISA fiduciary.

Assuming the collateral manager of a CDO is deemed to be an ERISA fiduciary with respect to the CDO investments of pension plans funds, the collateral manager will arguably owe a duty of care and loyalty to the pension funds in the course of exercising its discretion in making investment decisions. Claims of a breach of a fiduciary duty would likely include improper substitution of existing CDO assets with sub-par performing assets (as was alleged in the HSL Nordbank case). Potential ERISA duty of loyalty claims, which ERISA fiduciaries are also subject to, could be brought based on transactions between the CDO and an affiliate of the sponsor of the CDO assuming that the sponsor of the CDO and the collateral manager are one in the same. Some types of transactions with the CDO are potentially quite lucrative for sponsoring institutions, such as being the counter-party to certain types of derivative transactions entered into by CDO. As will be detailed shortly, ERISA litigation provides plaintiffs with some important potential advantages.

Not surprisingly, whether the collateral manager is in fact an ERISA fiduciary will turn on whether an exemption from ERISA is applicable. ERISA exempts CDOs when the CDO tranches are deemed "debt" for purposes of ERISA (in conjunction with several other requirements being satisfied). One basis for arguing for the debt status of a CDO tranche, and hence an ERISA exemption, is that the tranche is investment grade. One question that this type of argument will raise is the effect of the recent credit ratings' downgrades of a large number of CDO tranches to below-investment-grade status. Also, another commonly used exemption from ERISA used by CDOs, is to argue that no more than 25 percent of the CDO's equity has been

purchased by ERISA plans (in conjunction with certain specified benefit plans). Interestingly, the issue of ERISA coverage usually does not come up in the context of MBS purchases as Department of Labor regulations exempt from ERISA SPVs whose MBS are registered under the Securities Act of 1933.[47]

Another interesting source of potential litigation in the context of CDO purchases are claims that the pricing of the CDO assets or interests therein was inflated relative to the assets' or interests' "true" value. Even if the CDO purchase agreement does not contain representations or warranties, there might well be a contractual obligation to provide pricing information on an on-going basis that would give rise to a contractual claim. A related legal basis for bringing a pricing claim is a long line of cases that have held that, absent adequate disclosure, when the price charged an investor bears no reasonable relation to the "prevailing price" this operates as a fraud on purchasers.[48] These pricing types of claims are likely to be challenging to prove as result, in part, of the lack of comprehensive data on CDO structures and performance that could help inform the analysis of the appropriateness of the pricing in any particular set of circumstances. For instance, whereas Bloomberg has comprehensive coverage of the MBS market (as well as the ABS market in general), there is very little in the way of Bloomberg information on CDOs. The lack of comprehensive data on CDOs is also reflected in the coverage of other standard sources of financial data.

Besides the availability of data, there are two additional issues that could loom large in the context of a pricing claim. First, as the earlier discussion on CDOs emphasized, many CDOs are structured to cater to the needs and preferences of a certain targeted group of investors with the result being that there is substantial heterogeneity across CDOs. This lack of comparability

[47] See Tamar Frankel, *Securitization* (2nd Edition), p.184 for a discussion of these regulations.
[48] See Allen Ferrell, "The Law and Finance of Broker-Dealer Markups" (FINRA commissioned study) discussing this line of cases.

makes comparisons of pricing across CDOs quite challenging, even assuming data is available. Second, if the CDO purchasers received adequate disclosure, then it would be difficult to claim that there was fraudulent conduct in the pricing of the CDO. The adequacy of disclosure, in turn, could well be affected by the provision to CDO purchasers of various computer simulations of the payouts that would occur under different scenarios.

B. Claims by MBS purchasers

Although the most dramatic losses in value occurred for purchasers of CDOs with subprime exposure, there were nevertheless substantial losses suffered by MBS purchasers. Interestingly, there was not as dramatic a reversal in the credit ratings for MBS issuances as that which occurred with respect to CDO ratings. Be that as it may, litigation brought by major purchasers of MBS is already underway.[49]

One possible claim, given that most MBS are registered, is a false or misleading statement in the registration statement, giving rise to Section 11 liability. The issuer of the security, the SPV, underwriters, and auditors will all be subject to potential Section 11 liability (with the latter two groups having due-diligence defenses). With respect to other communications made during the registered offering process, misleading statements can give rise to Section 12(a)(2) liability. And, of course, such misstatements would be subject to Rule 10b-5 liability, but such a cause of action would have to survive the difficult hurdle of demonstrating scienter. Finally, there are a number of possible state causes of action, including breach of contract, fraud, and negligent misrepresentation that might be brought by MBS purchasers.

What are the likely candidates for misleading disclosures in the registration statement or offering communications for registered MBS? At least four candidates present themselves, all relating in some way to the underwriting quality of the underlying mortgages themselves, that

[49] See, e.g., *Luminent Mortgage Capital Inc. v. Merrill Lynch* (Eastern District Court of Pennsylvania).

could potentially be pursued by MBS purchasers: *i*) outright fraud with respect to the documentation surrounding the mortgage origination rendering statements made in the offering process false; *ii*) lack of adequate disclosure of underwriting standards for the underlying mortgages; *iii*) the extent to which exceptions were made to whatever the underwriting standards were; and *iv*) the pricing of the various MBS tranches. The presence of these disclosure issues in the registration statement, including fraud in the mortgage origination, will prove problematic for an SPV as there is no Section 11 due-diligence defense for issuers. Presumably, however, purchasers are more interested in suing whichever investment bank is responsible for establishing, marketing, and underwriting the SPV and its MBS in question.

One interesting issue that will arise in the context of this litigation is in what circumstances will these misstatements be deemed "material," a requirement for bringing actions under Section 11, Section 12(a)(2), Rule 10b-5, and most related state law claims. For instance, to what extent should the determination of the materiality of a misrepresentation turn on the hedging strategy of the MBS purchaser. Consider, for example, a MBS purchaser who buys the most junior tranches of a MBS as well as the MBS tranche that is only entitled to any prepayment penalties collected as a result of homeowners paying off their mortgages early. One possible rationale for such a strategy is that the prepayment tranche can serve as a hedge for the junior MBS tranches: As prepayments and hence prepayment penalties increase, the value of a prepayment tranche should rise, while the value of the junior MBS tranche should fall as there will be a reduction in interest payments left over after the more senior tranches are paid. The converse is also true: a reduction in prepayments should increase the value of the junior MBS tranches but at the expense of the prepayment tranche. In such a context, is a misrepresentation about the likely incidence of prepayments material? Does the fact that the risk of prepayment

fluctuations is at least partially hedged make it less likely that such a misrepresentation should be deemed material? An analogous issue will arise in the context of a claim that there was mispricing due to a false statement that prepayments were likely to be substantial, as an inflated price for the prepayment tranche would arguably imply an offsetting underpricing of the junior tranche.

With respect to all four disclosure issues, the role of the due-diligence firms looms as a potentially critical litigation issue in the actions being brought against various actors in the structured finance arena. The information provided to these parties by the due-diligence firms on the quality of the underlying mortgages is very likely to be the subject of extensive litigation for a number of reasons. First, the provision (and even the availability) of due-diligence information to the investment banks acting as the underwriter for the MBS will arguably affect the availability of a Section 11 due-diligence defense with respect to material misstatements in the MBS registration statement. Plaintiffs in this regard are likely to point to the *In re Worldcom, Inc. Securities Litigation*, 346 F.Supp. 2d 628 (S.D.N.Y. 2004) decision, where the court concluded that defendants had not established a due-diligence defense due to "red flags" that should have put the Section 11 defendants on notice that Worldcom's accounting was inaccurate.[50] Second, the provision of information on the underwriting quality of the mortgages will also arguably speak to the available of a "reasonable care" defense (the defendants did not know and in the exercise of reasonable care could not have know) with respect to any Section 12(a)(2) suits brought by MBS purchasers. Third, such information might be used in actions proceeding under state law, such as breach of contract and negligent misrepresentation claims.

[50] The key issue here will be what constitutes a "red flag" necessitating further investigation before a due-diligence defense will be viable. The discussion in *Worldcom* is quite sparse on this critical issue.

In short, it is quite likely that plaintiffs, in attempting to establish liability for various disclosure deficiencies, will attempt to rely upon information that is uncovered by the on-going investigations of the New York and Connecticut Attorney Generals, as well as the SEC in terms of what was actually known by the due-diligence firms concerning mortgage underwriting quality and the extent to which that information was shared with the investment banks. It has also been reported that the FBI is likewise investigating issues relating to the quality of the underwriting standards.

C. Claims against the Investment Banks: Three Basic U.S. Securities Law Principles

But the real importance of the role of the due-diligence firms is likely to lie not in the context of litigation brought by MBS purchasers, but rather in the large Rule 10b-5 class actions that have been filed against the investment banks (Citigroup, Merrill Lynch, Morgan Stanley), the mortgage originators (Countrywide, Fremont General, Impac Mortgage, Luminent Mortgage, New Century, Thornburg Mortgage) as well as the associated follow-on ERISA litigation. Again, these suits, including their filing dates and class periods, are summarized in Table 1.

Plaintiffs will undoubtedly argue that the information that was given to the investment banks in their capacity as sponsor of SPVs issuing MBS and as underwriter of those MBS establishes scienter, one of the main hurdles in bringing a Rule 10b-5 action; that is, the investment banks, it will be claimed, knew that the MBS securities and the CDO interests that they held on their *own* books were worth significantly less than what they were reporting to the markets in their 10-Qs and even in their 8-Ks announcing the debt write-downs. Moreover, the same line of attack will be employed to argue that the "contingent losses" faced by the investment banks as a result of potentially having to bring SPV assets onto their own books or purchasing ABCP were both large and understood by the banks. In the context of the ERISA

litigation filed against the investment banks and mortgage originators, the claims will be that the investment banks and mortgage originators, when acting in the role as an ERISA fiduciary, breached their duty of care and loyalty by purchasing imprudent investments on behalf of ERISA funds.

As we see the litigation unfolding, however, there are substantial challenges facing the plaintiffs bringing these Rule 10b-5 actions. For purposes of providing an overview we have divided these challenges into three basic principles of securities laws that plaintiffs will have to confront. Such an abbreviated discussion is obviously not intended to cover the full range of issues that will be raised in this litigation.

1. Principle One: The distinction between ex ante expectations and ex post losses

The basic distinction between *ex ante* expectations and *ex post* losses, a distinction fundamental to finance theory and long reflected in the U.S. securities laws, will go to the core of many of the alleged disclosure deficiencies with respect to the investment banks' disclosures to their security holders. The same statement holds true with respect to the litigation brought by MBS purchasers as well as the class action suits, documented in Table 1, brought against the mortgage originators. A failure to provide detailed disclosures concerning the implications of an event – the first national fall in housing prices since World War II and a corresponding dramatic rise in subprime defaults – that was unexpected by most market actors, as evidenced by the huge losses many of these actors themselves suffered, will likely prove an important stumbling block for plaintiffs. More specifically, many of the 10b-5 and ERISA class actions suits' class periods either begin in 2006 or earlier, as Table 1 documents, raising a question as to whether the subprime crisis was foreseeable in 2006.[51]

[51] The complaints filed to date typically assert that the losses were foreseeable, but with little in the way of substantiation, at least at this point in time. See, e.g., *Coulter v. Morgan Stanley* Class Action Complaint, 07-CV-

The Second Circuit's decision in *Olkey v. Hyperion 1999 Term Trust*, 98 F.3d 2 (2d Cir. 1996) is instructive on this point. In this decision the Court considered the claim by investors in a closed-end fund that held MBS that there was liability based on Section 11 and 12(a)(2) of the Securities Act of 1933, and Rule 10b-5 of the Exchange Act. The investors claimed, among other things, that there was a misrepresentation in the prospectuses marketing the fund, because it failed to disclose the risky nature of the underlying MBS portfolio and, furthermore, that there was a failure to disclose the size of the potential losses if there was an adverse move in interest rates. Needless to say, the purchasers in this case suffered substantial losses. In rejecting these arguments, the Second Circuit noted that the plaintiffs "claim that another set of investment choices should have been made, based upon a different conception of what interest rates would do. . . . This is only to say in *hindsight* that the managers of those [alternative] funds turned out to be more skillful in their predictions." (emphasis added) In other words, the presence of disclosure failures (and the materiality thereof) must be assessed in light of what was knowable at the time of the disclosure without the benefit of 20/20 hindsight, even if *ex post* substantial losses have occurred. The case law of other circuits is in line with the Second Circuit's *ex ante* approach. For instance, the Sixth Circuit has explained that there is a duty to disclose the potential hazards of a product and future potential regulatory action only if such eventualities are "substantially certain" at the time. *Ford Motor Company Securities Litigation*, 381 F.3d 563 (6th Cir. 2004) The Eight Circuit, on a similar note, has conditioned a duty to disclose if the effect of a future possibility can be "reasonably estimated." *In re K-Tel Int'l, Inc. Securities Litigation*, 300 F.3d 881, 893 (8th Cir. 2002).

11624 ("Despite the fact that Morgan Stanley was able to anticipate the losses from its exposure to subprime mortgage investments as far back as 2006, it failed to take any action to protect the Plans' participants from these foreseeable losses." Paragraph 103).

A number of pieces of evidence will speak to what was foreseeable at different points in time, some of which have already been raised, such as the changing nature of the RMBS market in recent years. One way to consider this issue is to look at investment banks' reported value at risk (VaR) estimates, a widely used measure by investment banks to measure the risk inherent in their financial positions, immediately before the subprime losses. Did these estimates predict, even in a rough way, the size of the subsequent write-downs or even which firms were most exposed in a situation where the credit markets substantially tightened? Based on the VaR figures reported in investment banks' 10-Ks, the answer appears to be a resounding "No."

The VaR numbers reported by the leading investment banks in their 10-Ks is summarized in Table 8. VaR figures for 2007 are available for only some investment banks, as some banks have not yet filed their 2007 10-Ks. Goldman Sachs had the second highest reported VaR for 2006 (and for 2007 the highest so far); a figure that is itself an underestimation given that Goldman Sachs reports a VaR estimate solely for its trading portfolio as opposed to firm-wide VaR (a figure that UBS AG, the bank with the highest reported VaR, reports). Towards the other end of the spectrum, the third lowest reported VaR estimate was that of Merrill Lynch, whose VaR was less than half of that of Goldman Sachs. Of course, it has turned out that Merrill Lynch has had among the highest write-downs, whereas Goldman Sachs has so far escaped the decline in subprime prices relatively unscathed. The correlation between an investment banks' reported VaR for 2006, the year immediately prior to the subprime crises, and their subsequent write-downs, summarized in Table 8, was a meager 0.3.

Besides the predictability of the subprime mortgage losses at different points in time due to the nationwide housing downturn, there is also a more micro issue that also speaks to what constituted statements that were not misleading or material *ex ante*. This issue goes to the fact

that the ability to model different scenarios for a given pool of mortgages, or, in the case of CDOs with subprime exposure, mortgaged-backed securities, depends heavily on having historical information as to the actual performance for *that* pool of mortgages or mortgage-backed securities. As a result, as time passes, the level of knowledge concerning different possible scenarios will likely increase relative to what was known (or knowable) at the time that the SPV was created and interests therein sold to investors. A commonly-held view is that one needs two years of historical data to gain meaningful additional insight into possible future performance scenarios. This observation is important as most of the CDOs that have suffered substantial losses were created in the last two years.

In short, plaintiffs will have to provide a basis to establish that there were misleading material disclosures made beyond merely noting that there was extensive economic loses.

2. Principle Two: Undisclosed information already known by the market does not give rise to recoverable damages

Another important issue that will be germane to many of the securities claims being filed is not only what did the issuer (or other parties being sued) reasonable know *ex ante*, but what did the market know and when did it know. With respect to macroeconomic issues, such as the current or future state of the economy, interest rates or the national housing market, it is quite implausible to believe that the SPVs or the investment banks sponsoring and underwriting the MBS or sponsoring the CDOs had any special knowledge concerning these matters that was not already know by the market. Indeed, even for information such as the national default rate on subprime mortgages, which directly, immediately, and sometimes substantially affected the value of MBS and CDOs, it is likewise unclear the basis on which one could establish that the

various participants in the structured finance markets had private knowledge, unknown by the market at large, about such a general macroeconomic issue.

In a situation where the market is as informed as a defendant, whether it be an SPV or some other participant in the structured finance market, as to a particular issue, then the "truth on the market" doctrine in securities law will provide an opportunity for defendants to argue that any misrepresentation concerning that issue was not material and, hence, not actionable, whether the cause of action is Section 11, Section 12(a)(2) or Rule 10b-5. As the Second Circuit succinctly summarized this doctrine, "a misrepresentation is immaterial if the information is already known to the market because the misrepresentation cannot then defraud the market." *Ganino v. Citizen Utilities Co.*, 228 F.3d 154, 167 (2000).

If this information was not known (or even knowable) by any market actors then the issue of "loss causation" will become important. "Loss causation" is the necessary connection between a material misstatement and plaintiffs' economic losses and must be established by plaintiffs in a Rule 10b-5 action and is a defense in Section 11 and Section 12(a)(2) actions. The Supreme Court, in its seminal decision in *Dura Pharmaceuticals v. Broudo*, 544 U.S. 336, 352-53 (2005), explained that losses due to "changed economic circumstances, changed investor expectations, new industry-specific . . . conditions, or other events, which taken separately or together account for some or all of that lower price" will not be recoverable as a result of the loss causation requirement. Defendants will likely argue that a changed "economic circumstance" and "new industry-specific" factor was the unexpected nationwide decline in the fortunes of the housing market. Losses occurring as a result of this are therefore non-recoverable as they were not caused by any disclosure deficiency, even assuming that there was one. The importance of loss causation has recently taken on added importance as a result of the Fifth Circuit's recent decision

in *Oscar Private Equity Investments v. Allegiance Telecom, Inc.*, 487 F.3d 261 (5th Cir. 2007) holding that loss causation must be established before class-wide reliance can be presumed *at the class certification stage*.

Consider, by way of example of these issues, a claim that an investment bank knew that the true value of a pool of mortgages held in an SPV or held on its own books was lower than that publicly presented in the offering materials or the bank's disclosures to the market as a result of being provided information by a due-diligence firm that the underwriting quality of some of the mortgages was questionable. If this impaired underwriting quality for the type of mortgage in question, say for 2006 refinancing no-documentation mortgages originated by mortgage brokers, is true on a market-wide basis (and not just for the mortgages held the investment bank), then it becomes questionable whether the information held by the investment bank is any different from what was already known by the market based on existing market-wide information on underwriting quality. In other words, the question will be the extent to which the information allegedly held by the investment bank would have changed market expectations if the market had learned the information. As always, the burden of establishing that such a change in market expectations would have occurred, and hence the disclosed information is arguably "material", is placed on the plaintiff.

Moreover, even assuming that the information privately provided to the investment bank concerning the underwriting quality of the mortgages (and not disclosed) held by the SPV, or retained on its own books, was inferior to the typical underwriting quality on a market-wide basis for the universe of mortgages (holding constant the other attributes of the mortgage pool that were publicly disclosed) it is still nevertheless legally relevant what the market knew and when did it know it. The private information that the investment bank would have in this situation is

the non-disclosure of the difference between the underwriting quality of the particular pool of mortgages in question and what was already know by the market about underwriting quality of mortgages in the market as a whole (the underwriting quality of which might be low). In this connection, it is worth noting that the larger the pool of mortgages (or MBS), all else being equal, the more likely it is that the pool will reflect the average underwriting quality of mortgages in the market as a whole.

With respect to claims that there was inadequate disclosure of potential exposure to off-balance sheet losses, the "truth on the market" doctrine will once again be potentially relevant. Even assuming an obligation to disclose such information under the applicable accounting rules, the question will remain whether such non-disclosure was material or, rather, was the market already aware of potential off-balance sheet exposures. Two observations cast some light on this issue. First, many of the purchasers of CDO tranches and ABCP issued against conduits holding CDO tranches were large institutional investors, particularly hedge funds, and were almost certainly well aware of the details of the off-balance sheet arrangements, including sources of credit enhancement and providers of liquidity facilities. This knowledge could constitute an important mechanism by which information relating to off-balance sheet exposures could have reached market participants, such as hedge funds, that could trade on that information in the course of buying and selling the investment banks' stock (thereby ensuring that the investment banks' stock price reflected this information). It is worth pointing out in this connection that plaintiffs, in bringing the 10b-5 class actions summarized in Table 1, all claim that the market was semi-strong efficient, i.e. that the investment bank's security price (or the security price of any other defendant, such as a mortgage originator) reflected all readily available information. Plaintiffs need to so allege to establish reliance on a class-wide basis, but it does raise the specter

of a successful "truth on the market" argument as to the non-materiality of the off-balance sheet exposures. Second, Lim, Mann, and Mihov (2005) document that the market impounds into the yields of debt issued by companies engaged in off-balance sheet financing of operating leases their off-balance sheet exposure despite the limited disclosures by firms of such arrangements.[52]

3. Principle Three: Two distinct types of disclosure deficiencies

Besides the macroeconomic forces that resulted in the nationwide decline in housing prices and the issue of what the market versus individual entities knew about the consequences of such a decline for particular pools of mortgages (or pools of MBS), there is yet another distinction that is likely to prove important in the subprime litigation that is worth bearing in mind. This distinction is between disclosure issues with respect to the quality of the underlying mortgages (or MBS in the case of CDOs) and disclosure issues with respect to which parties were exposed to the risk of these assets falling in value.

This distinction is important, as losses arising from the decline in the market value of MBS and CDOs that resulted from a lack of transparency as to which parties faced subprime exposure will not be recoverable. Investment banks, SPVs, mortgage originators or, for that matter, any other market participant simply have no legal duty to disclose where the risk in the system lies. Indeed, it would be literally impossible for such disclosures to take place, as no single entity has such information. By way of example, consider one of the most subprime-exposed investments, the lower tranches of MBS. These lower tranches were often repackaged by CDOs and, indeed, these CDO interests were sometimes in turn repackaged yet again through another CDO structure with a variety of investors, often including hedge funds, purchasing these repackaged interests. Moreover SPVs issuing MBS and CDOs would attempt to spread credit

[52] See Steve Lim, Steven Mann, and Vassil Mihov, "Market Evaluation of off-balance sheet financing: You can run but you can't hide," Working Paper, 2003.

risk by entering into transactions such as credit defaults with third parties. As a result of this, it is simply impossible for any single entity to know who the ultimate holders exposed to subprime losses ultimately are, especially after possible reselling by holders of these instruments and third party derivative transactions by the CDOs and SPVs. Indeed, it was precisely the most exposed interests, the lower tranches, that saw the most repackaging, and whose risk was least transparent. Not surprisingly, a common observation is that Rule 144A CDO global notes, the typical form that CDO tranches are issued, are difficult to track. Indeed, the collateral managers of CDOs were reported to have sometimes been specifically prohibited from knowing the identity of some CDO purchasers as a result of various confidentiality agreements.

One powerful reason for why the distinction between these two types of disclosure deficiencies is important is that a substantial portion of the market declines may be convincingly attributed to the lack of transparency as to which market actors had subprime exposure. As has been widely reported, market entities have feared entering into a variety of transactions, such as credit default swaps, in case the counter-party will not be able to honor their obligations due to undisclosed subprime exposure. As a result, liquidity and the transfer of risk in the market has seized up. The market's fears concerning counter-party risk have in fact been partially realized with respect to bond insurance. Merrill Lynch, along with other investment banks, has substantially written off the value of the bond insurance provided by MBIA Inc. and Ambac Financial Group Inc. as a result of these bond insurers extensive subprime exposure.

One can see the deep concern over counter-party risk in the LIBOR wholesale money market. As the spread between the three-month LIBOR rate and the three-month Treasury bill (which is widely used as a proxy for the short-term risk free rate) increases, the greater the market's expectation of default on the obligation to return these funds; i.e., the greater the

market's perception of counterparty/credit risk. Figure 7 plots the spread between the three-month LIBOR rate (in U.S. dollars) and the three-month Treasury rate starting in 2006. The dramatic increase in the spread began on August 9, 2007[53] and, after subsiding briefly, increased once more with a peak on December 11, 2007. It is worth emphasizing that the market perceived there to be significant counterparty risk even though the counter-parties in the LIBOR wholesale money market are the largest, most well-established banks.[54] The market's concerns with counter-party risk applied *a fortiori* to less established market actors during this time period. In short, there is significant evidence that an important part of the subprime crisis, and the associated fall in value of subprime mortgages, involved market concerns over who were holders of instruments exposed to subprime, as well as the magnitude of those losses. Interestingly, these market concerns, at least as proxied by the LIBOR – Treasury spread, were essentially absent in 2006.

D. Claims against the Investment Banks: Some Accounting Issues

The typical Rule 10b-5 class action complaint against the banks alleges that the bank did not adequately disclosure and reserve for its potential liability for losses experienced by off-balance sheet entities. For instance, Citigroup has experienced substantial losses due to the fall in value of ABCP issued against the most senior (sometimes called "super senior") tranche of various Citigroup-sponsored CDOs with extensive subprime exposure. Obviously allegations of improper disclosure of losses that might occur due to off-balance sheet exposures will turn on the

[53] On August 9, 2007 the European Central Bank and the Federal Reserve injected money into the banking system given concerns over credit-market conditions. On that same day, BNP Paribas reported that it was suspending the calculation of net asset value as well as subscriptions/redemptions for three of its funds, the Wall Street Journal reported that the North American Equity Opportunities hedge fund, backed by Goldman Sachs, was in trouble; IKB Deutsche Industrie Bank AG reported substantial subprime losses and Toll Brothers announced a 21 percent reduction in preliminary revenue for the third quarter and refused to provide future guidance.

[54] The contributing banks for the LIBOR rate (USD) in 2007 were: Bank of America, Bank of Tokyo– Mitsubishi UFJ, Barclays Bank plc, Citibank NA, Credit Suisse, Deutsche Bank AG, HBOS, HSBC, JP Morgan Chase, Lloyds TSB Bank plc, Rabobank, Royal Bank of Canada, The Norinchukin Bank, The Royal Bank of Scotland Group, UBS AG, and West LB AG.

applicable accounting rules. In the context of off-balance sheet entities exposed to subprime that resulted in losses for investment banks (as well as mortgage originators), much of the discussion to date has focused on whether there was a "true sale," as defined in Statement of Financial Accounting Standard No. 140, *Accounting for Transfers and Extinguishments of Liabilities* (FASB 140), of subprime mortgages by the investment bank (or the mortgage originator) to the SPV issuing the MBS. This is of considerable interest given that if there was a "true sale" then the asset need not remain on the balance sheet of the transferor upon sale.

However, another important accounting issue, which has not received as much attention as FASB 140, is the application of FASB Interpretation 46(R), *Consolidation of Variable Interest*s (FASB 46(R)) which provides guidance on when off-balance sheet entities, not enjoying an exemption from FASB 46(R) treatment, need to be consolidated onto the balance sheet of the investment bank sponsor or other entities as a result of the investment bank sponsor or other entity being exposed to losses that the off-balance sheet entity might experience. The importance of FASB 46(R) in the context of the subprime litigation lies primarily in the fact that many CDOs with subprime exposure are subject to FASB 46(R) given their structure. Specifically, the exemption from FASB 46(R) treatment for entities that are not actively managed will not be available to the many CDOs that are actively managed by the collateral manager. In broad strokes, FASB 46(R) requires consolidation of an actively managed CDO onto the balance sheet of an entity, such as investment bank sponsor, when that entity will absorb more than 50 percent of the expected losses or expected returns of the CDO in question.

The FASB 46(R) analysis reflects the basic distinctions between *ex ante* expectations versus *ex post* losses and information held by an individual market actor versus information held by the market as a whole that were emphasized earlier. Reflecting the first distinction, FASB

46(R) requires calculation of which entities, if any, are subject to a majority of the off-balance sheet's *expected* losses and returns, not realized losses and returns. Furthermore, FASB 46(R) refers to FASB Concept Statement Number 7, *Using Cash Flow Information and Present Value in Accounting Measurements* when describing how the probabilities of future events should be calculated. This Concept Statement explains that, "The use of an entity's own assumptions about future cash flows is compatible with an estimate of fair value, as long as there are no contrary data indicating that marketplace participants would use different assumption. If such data exists, the entity must not adjust its assumptions to incorporate that market information." In other words, expected losses and returns must be based, to the extent possible, on the market's perception of the probability of future events, rather than the individual entity's determination. One arguably possible indication of the market's assessment of the probability of future losses is whether or not the CDO tranche enjoys an investment-grade rating.

E. ERISA litigation

There have already been a number of ERISA lawsuits complaints already filed arising out of the subprime crisis as is evident from Table 1. ERISA suits have been filed, among others, against Citigroup, MBIA, Merrill Lynch, Morgan Stanley, and State Street. The potential sums involved in these ERISA lawsuits should not be underestimated. For instance, in one of the ERISA complaints filed against Fremont General Corporation, the complaint states that the ERISA "breaches have caused the [ERISA] plans to lose over 164 million dollars of retirement savings."[55] The Citigroup ERISA complaint alleges that the losses from the ERISA violations were "over $1 billion".[56] In many ERISA complaints, not surprisingly given the early stage of the litigation, the allegations concerning damages are quite vague. For instance, one of the

[55] *Johannesson v. Fremont General Corporation* Complaint, p.4.
[56] *Rappold v. Citigroup* Complaint

ERISA complaints filed against State Street merely states that State Street's alleged ERISA violations caused "hundreds of millions of dollars of losses."[57]

The ERISA litigation represents an important component of the subprime litigation as ERISA provides plaintiffs with two important advantages. First, plaintiffs need not establish scienter as is the case under Rule 10b-5. Rather, liability is based on a breach by a defendant of a fiduciary duty. Second, at least pre-*Dura Pharmaceuticals,* the measure of damages resulting from a breach of a fiduciary obligation has tended to be quite generous, at least as reflected by the terms on which ERISA suits are settled. Given the importance of these two advantages, a few comments will be made on both.

1. The fiduciary breach

Virtually all the ERISA complaints filed against the investment banks and mortgage originators to date claim that the company executives and administrators who oversaw the retirement plans, and who were therefore allegedly ERISA fiduciaries, knew, or should have known, that the company was facing substantial losses from subprime exposure and, hence, should have disclosed this information to plan participants.

Several interesting issues arise with respect to such a claim, besides the obvious issue once again of whether the subprime crisis was foreseeable. One issue looming in the background is the extent to which courts will be willing to transform ERISA into a third general securities disclosure statute complementing (or substituting) for the detailed disclosure regimes established in the Securities Act of 1933 and the Exchange Act of 1934. This issue arises as a result of the fact that many of the ERISA complaints allege that the company executives and administrators had a duty to disclose to the plan participants adverse information they purportedly had about the potential losses facing the firm. At the end of the day, however, if an ERISA fiduciary does in

[57] See *Unisystems, Inc. v. State Street Bank and Trust Company* Complaint

fact have a duty to disclose information to plan participants, such a duty will extend to all investors, plan participants or not. It is simply not tenable or consistent with other aspects of U.S. securities regulation to have such a duty extend only to a subset of investors.

A second interesting issue with respect to a duty to disclose basis for ERISA liability is how to think about what the situation of the plan participants would have been but for the purported ERISA violation. Presumably an announcement by ERISA fiduciaries that a firm was facing substantial losses due to subprime exposure would have resulted in a drop in the value of the stock held by the plan participants. If such a disclosure would not have resulted in a stock market reaction, it is difficult to see how there could be a duty to disclose the information in the first place as it would not be material. But this logic has an interesting implication for damages resulting from such an ERISA violation. The failure to disclose the adverse information by the ERISA fiduciaries did not cause the losses suffered by the plan participants with respect to the securities they held at the time the breach of the duty to disclose, but rather merely delayed it (as the information did eventually come out).

2. ERISA damages

Plaintiffs bringing ERISA actions have long argued, relying on the Second Circuit's 1985 opinion in *Bierwirth v. Donovan*, 754 F.2d 1049, that damages should be calculated based on the best performing fund available in the plan. In times of market declines, such a fund might well be a money market fund. This approach can effectively render the ERISA fiduciary an insurer against general declines in the stock market.

The ERISA statute itself merely states that the ERISA fiduciary shall "make good to such plan any losses to the plan resulting from each such breach . . ." 29 U.S.C. 1109 (2000). The Supreme Court's decision in 2005 in *Dura Pharmaceuticals* explained that losses due to market

and industry-wide developments will not result in damages if such damages are not caused by actionable misconduct (in *Dura Pharmaceuticals* the misconduct was actionable under Rule 10b-5) by the defendant. Applying the same reasoning to ERISA damages, one could argue that market and industry wide declines are not the "result[ ]" of a breach of fiduciary duty. Such an argument, given the important implications it has for the extent of the damages available under ERISA, will be hotly contested. The issues involved in resolving such a debate are quite involved, including consideration of the proper interpretation of the *Bierwirth* opinion, the continued validity of *Bierwirth* in light of *Dura Pharmaceuticals*, and the notion of "causation" in the common law of trust that has been used by courts in the course of interpreting the ERISA statute.

F. The rating agencies

Much of the blame, fairly or unfairly, for the subprime losses has been placed at the feet of the rating agencies, principally Moody's, Standard & Poor's, and Fitch. Nevertheless, the litigation against the rating agencies does not appear to be as well grounded as some might expect.

Both Moody's and the parent company of Standard & Poor's, McGraw-Hill, are facing Rule 10b-5 class actions. The crux of plaintiffs' claims in this litigation is that the rating agencies "assigned excessively high ratings to bonds backed by risky subprime mortgages."[58] The challenge facing plaintiffs here are two-fold: *i*) specifying the precise meaning of "excessively high"; and *ii*) why "excessively high" ratings, so defined, "inflated" the stock price of the rating agencies to the detriment of their security holders. As to the first issue, to the extent to which the rating criteria were publicly available, it will be difficult to maintain that ratings that were generated as a result of those criteria were too "high," whatever one thinks of the criteria

[58] See, e.g., *Teamsters Local 282 Pension Trust Fund v. Moody's Corporation* Complaint, 07 CV 8375.

themselves. A rating arguably has no meaning without reference to the criteria that generated it, which was publicly known and could be independently assessed by third parties. The source of the fraud is therefore difficult to locate. As to the second issue, even stipulating that the ratings were "high" by reference to some metric, other than the stated criteria themselves, it will still be necessary to show that such "high" ratings inflated the rating agency's stock price. Even if one were to assume, for purposes of discussion, that unduly "high" ratings were generated to ensure repeat business for the rating agency from issuers of MBS and CDOs (and putting aside the fact that there were very few choices that issuers had for ratings in any event), the mere fact that business practices might be questionable does not establish that the stock price didn't reflect the true value of the business so conducted.

There have been suggestions by some that the rating agencies should be deemed "underwriters" of the MBS and CDO tranches they rated for purposes of the Securities Act of 1933, and hence are subject to Section 11 liability. Such a conclusion seems unlikely for two reasons. First, and perhaps most fundamentally, much of the subprime losses as well as much of the controversy over the quality of the ratings has arisen with respect to CDOs. These, however, are privately placed rather than registered, and hence by definition it is legally impossible for an entity to be deemed a Section 11 underwriter. Second, the fee structure for rating agencies is such that the rating agency gets paid for providing a rating and not for the success of the offering. Nor have the rating agencies purchased rated tranches with a view to resale. As a result, the rating agencies are not "underwriters," at least as that term has long been understood in the context of the Securities Act of 1933.

V. Conclusions

Two of the strengths of the U.S. capital market are its ability to innovate and spread risk widely amongst investors. The recent past has highlighted, however, that successful innovation and risk spreading are predicated on sophisticated market participants being able to rely on information conveyed across the chain of participants that originate, appraise, and service collateral, and underwrite, manage, insure, rate, and sell securities. Where information cannot be or is not conveyed, or where a market participant acts in such a way as to undermine the integrity of the chain, the chain can be compromised.

Over the next few years, litigation among market participants will serve to identify those links in the subprime mortgage chain that may have been weak. Alternatively, this litigation will serve to highlight where the market may have underestimated certain risks or failed to anticipate particular circumstances, rather than the actions of any particular market participant. This is a distinction that the current subprime litigants will undoubtedly have to struggle with.

Figure 1: Mortgage Origination and Mortgage Backed Securitization

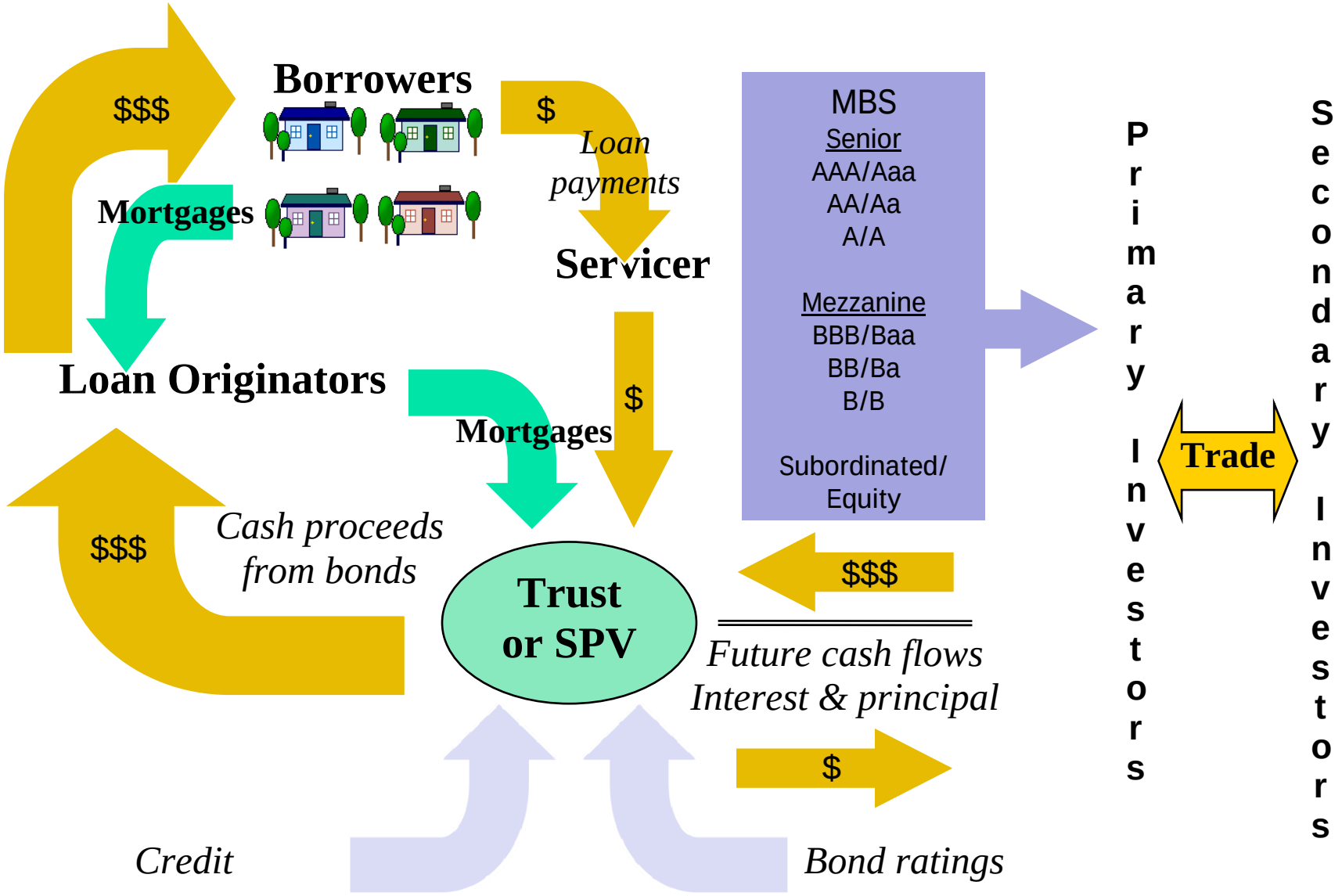
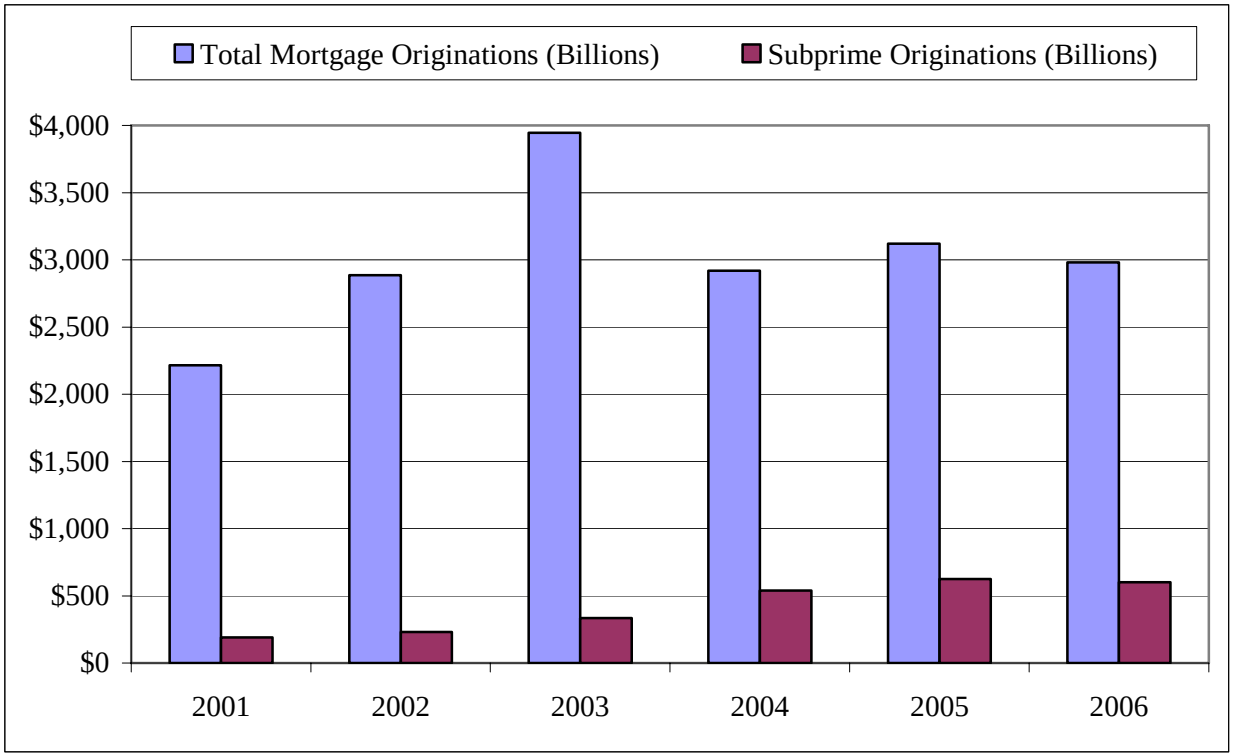


Figure 2. Mortgage Originations, 2001-2006



Source: The Subprime Lending Crisis: The Economic Impact on Wealth, Property Values and Tax Revenues, and How We Got Here, U.S. Congress Joint Economic Committee, October 27, 2007 Data from Inside Mortgage Finance, The 2007 Mortgage Market Statistical Annual, Top Subprime Mortgage Market Players & Key Data (2006).

Figure 3. MBS Issuance Trends, 1996-2007

Figure 3. Panel A. Number of Deals

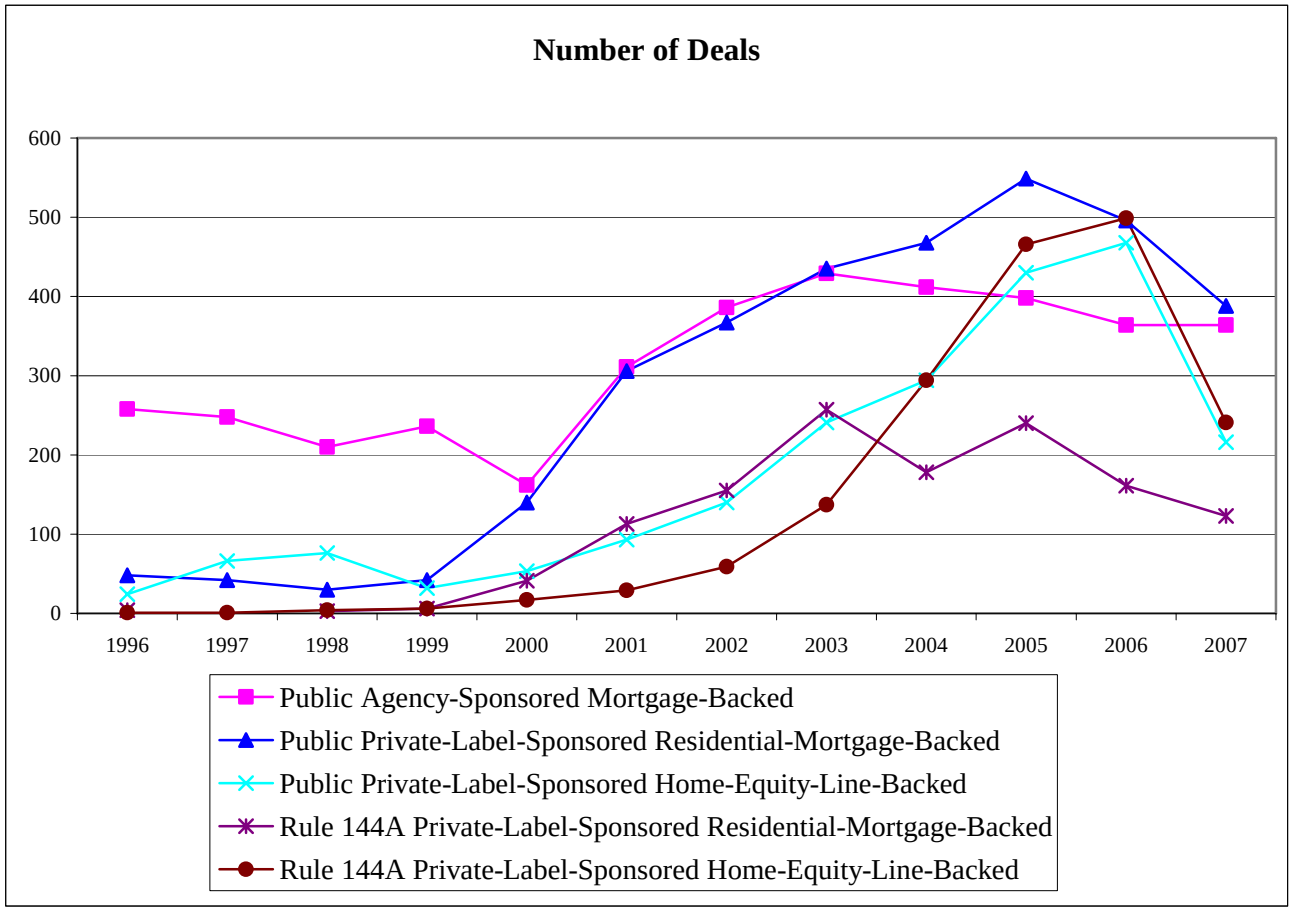
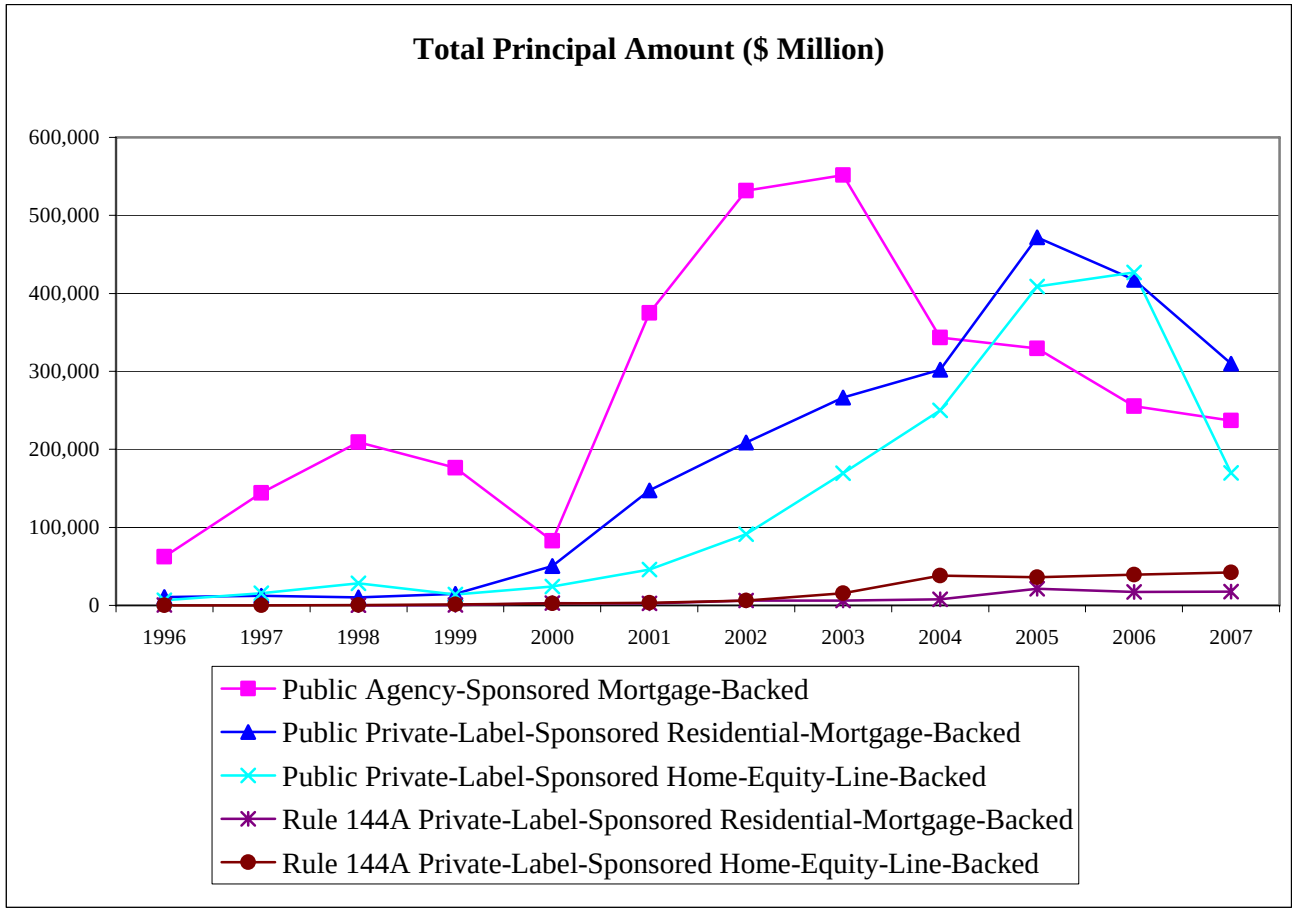
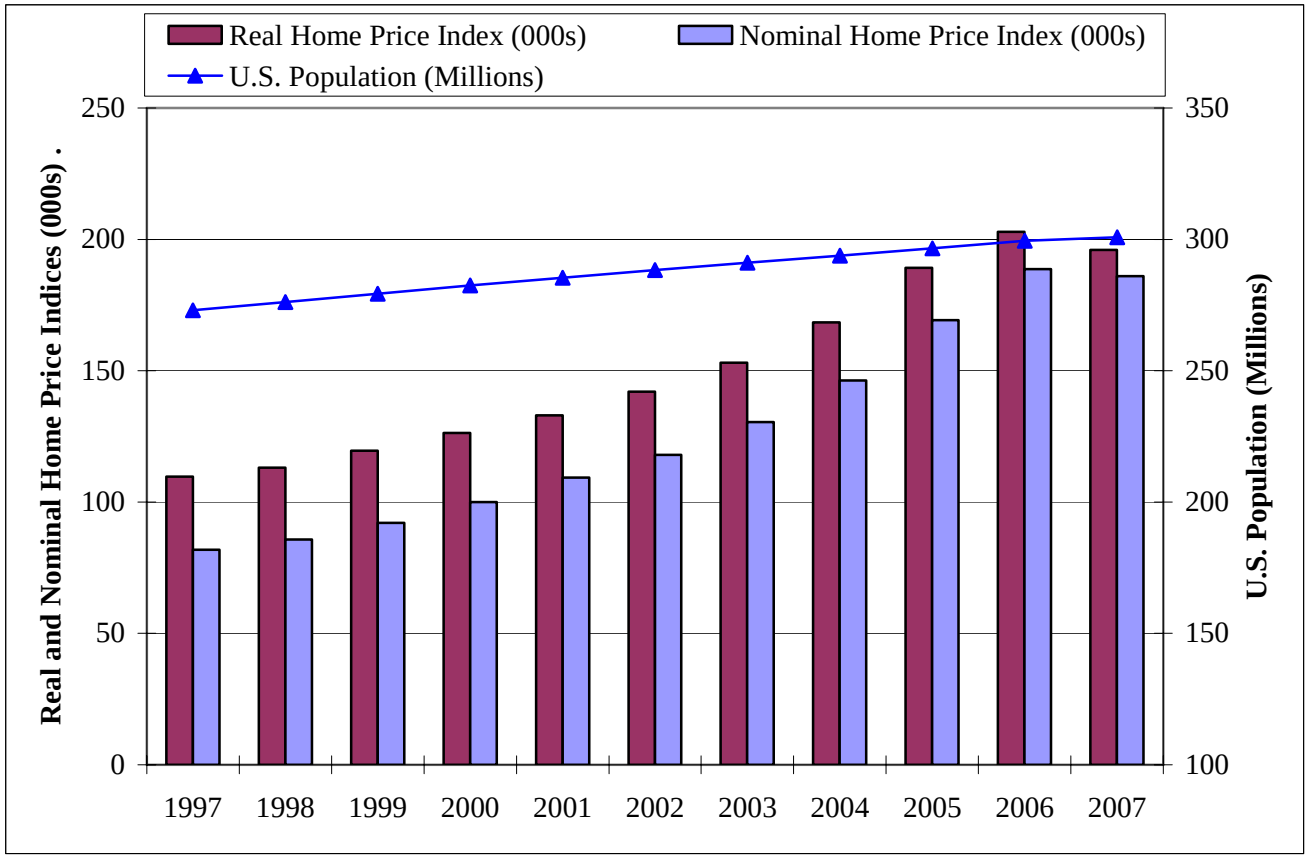


Figure 3. Panel B. Total Principal Amount



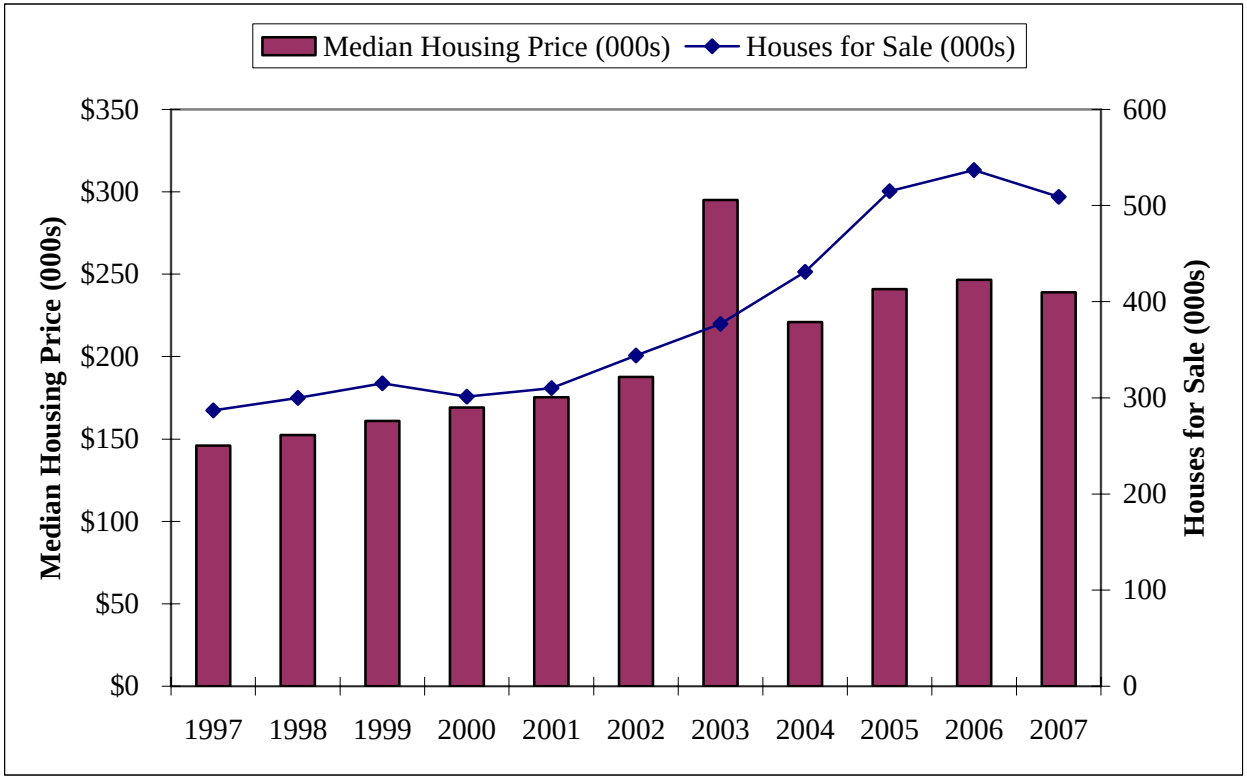
Data Source: SDC Platinum.

Figure 4. Real and Nominal Housing Prices and Population, 1997-2007



Source: Robert J. Shiller, Irrational Exuberance, 2nd. Edition, Princeton University Press, 2005, Broadway Books 2006, as updated by author.

Figure 5. Houses for Sale and Median Housing Prices, 1997-2007



Source: Bureau of the Census, U.S. Department of Commerce.

Figure 6. Changes in MBS, 1996-2007

Figure 6. Panel A. Average Deal Size

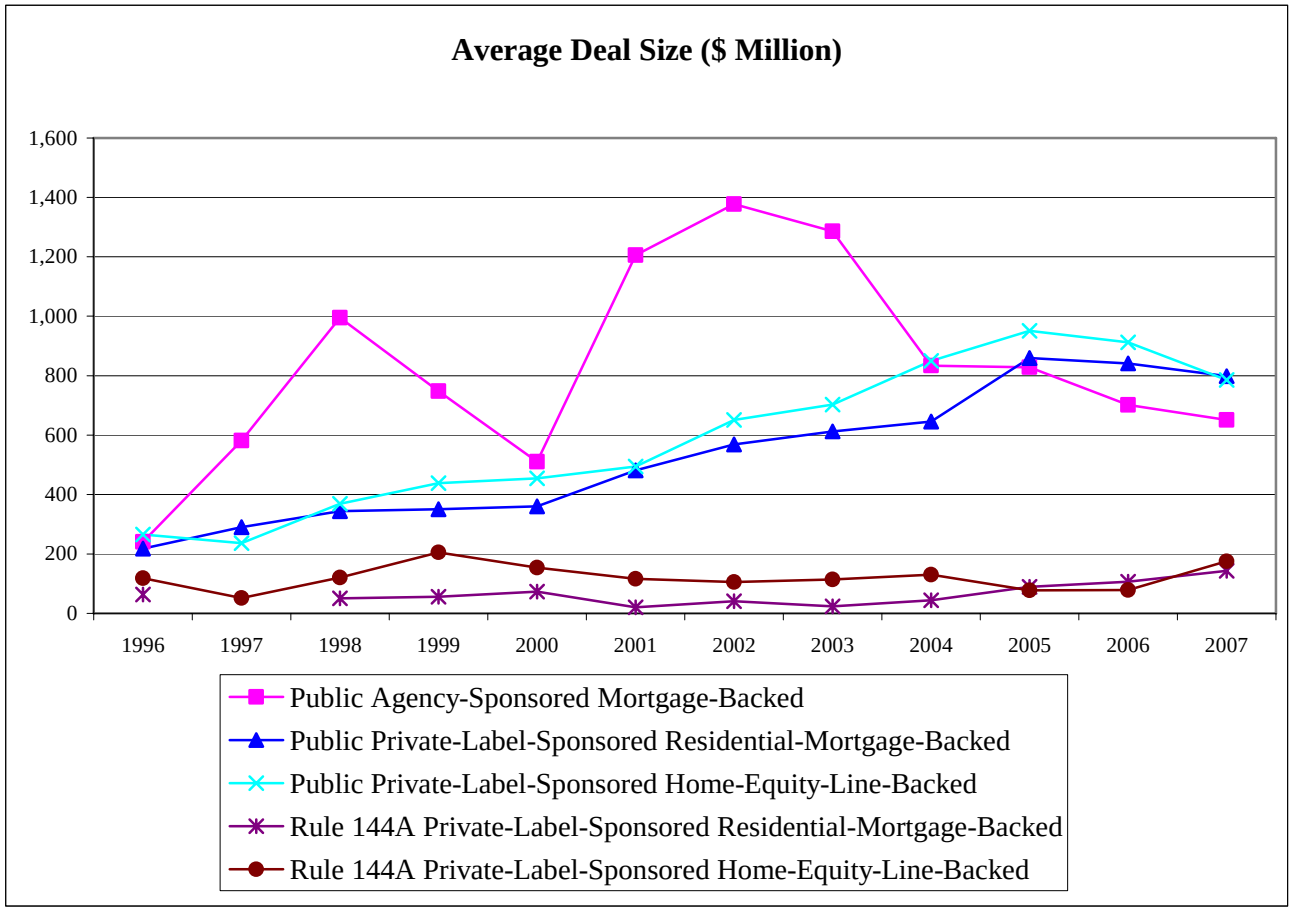


Figure 6. Panel B. % of Deals with Multiple Bookrunners

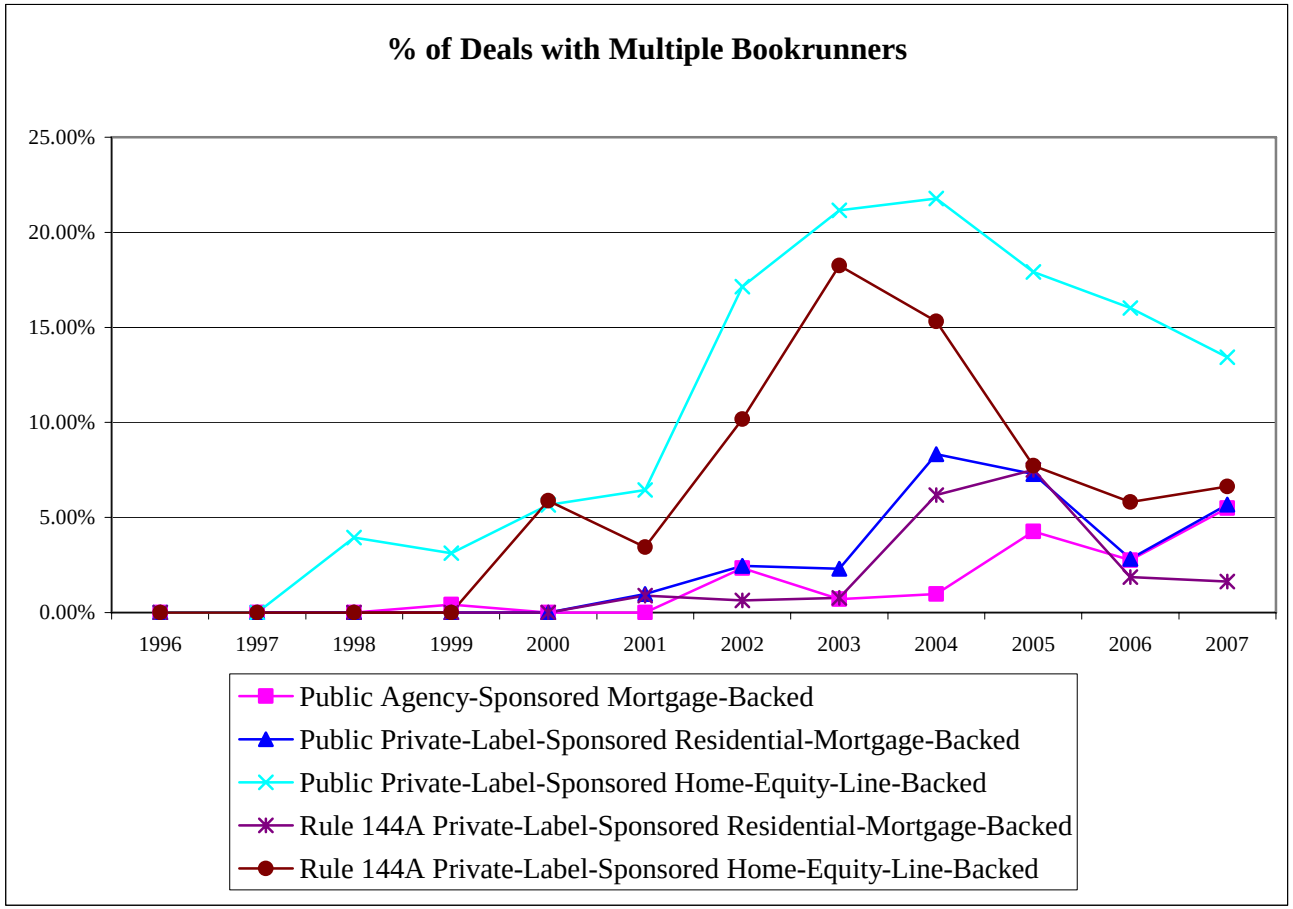


Figure 6. Panel C. Average Number of Bookrunners

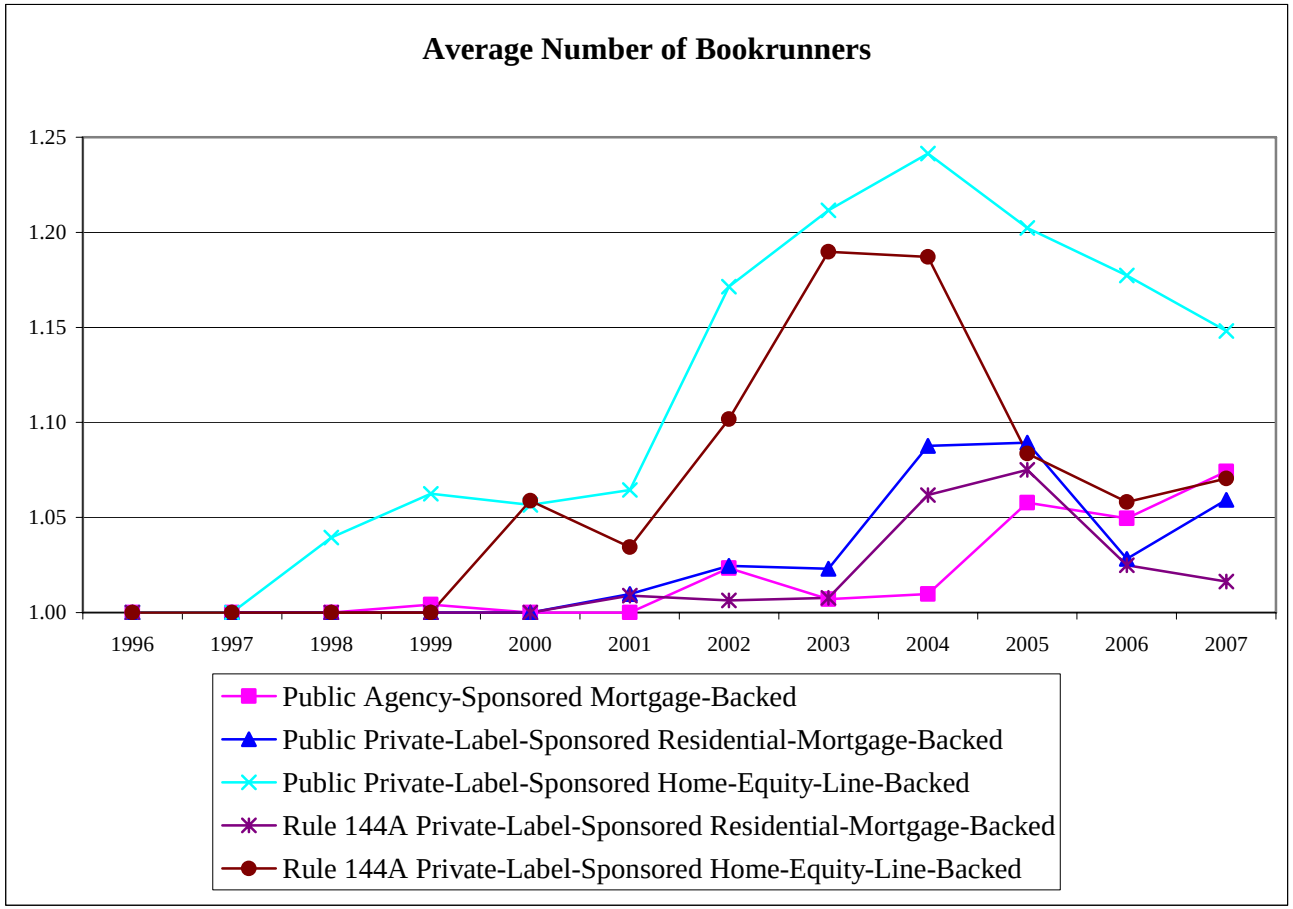


Figure 6. Panel D. Average Number of Tranches

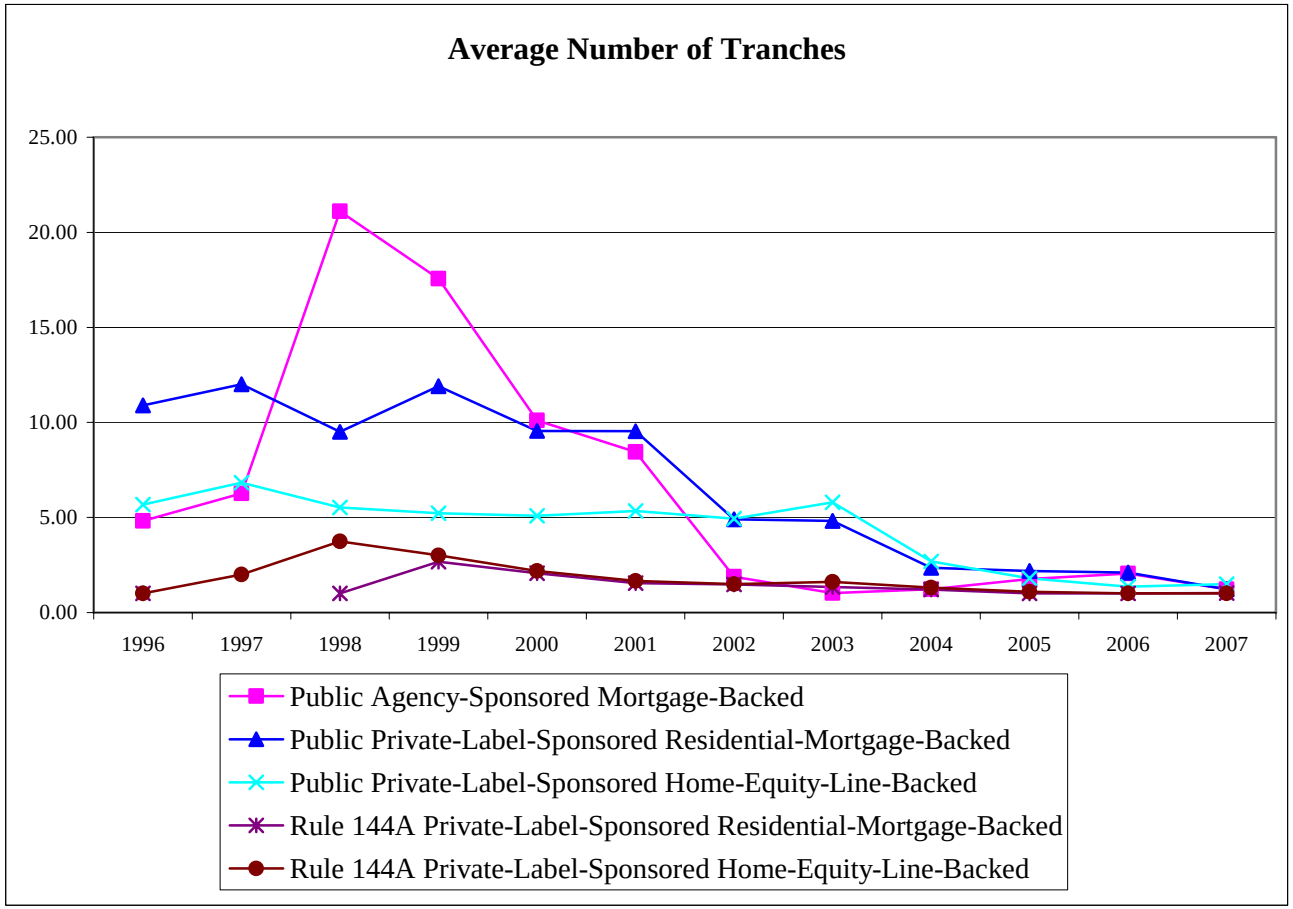
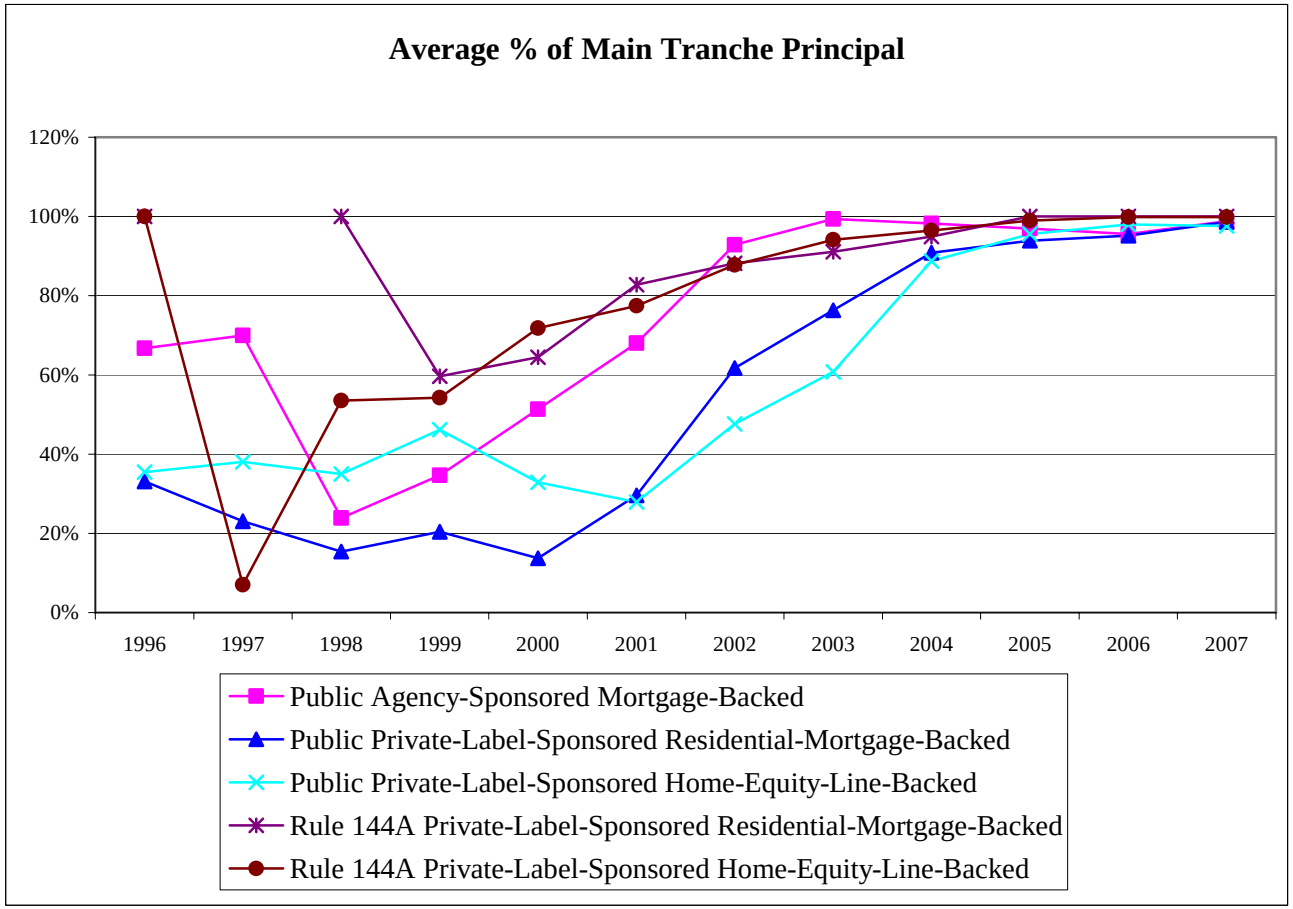
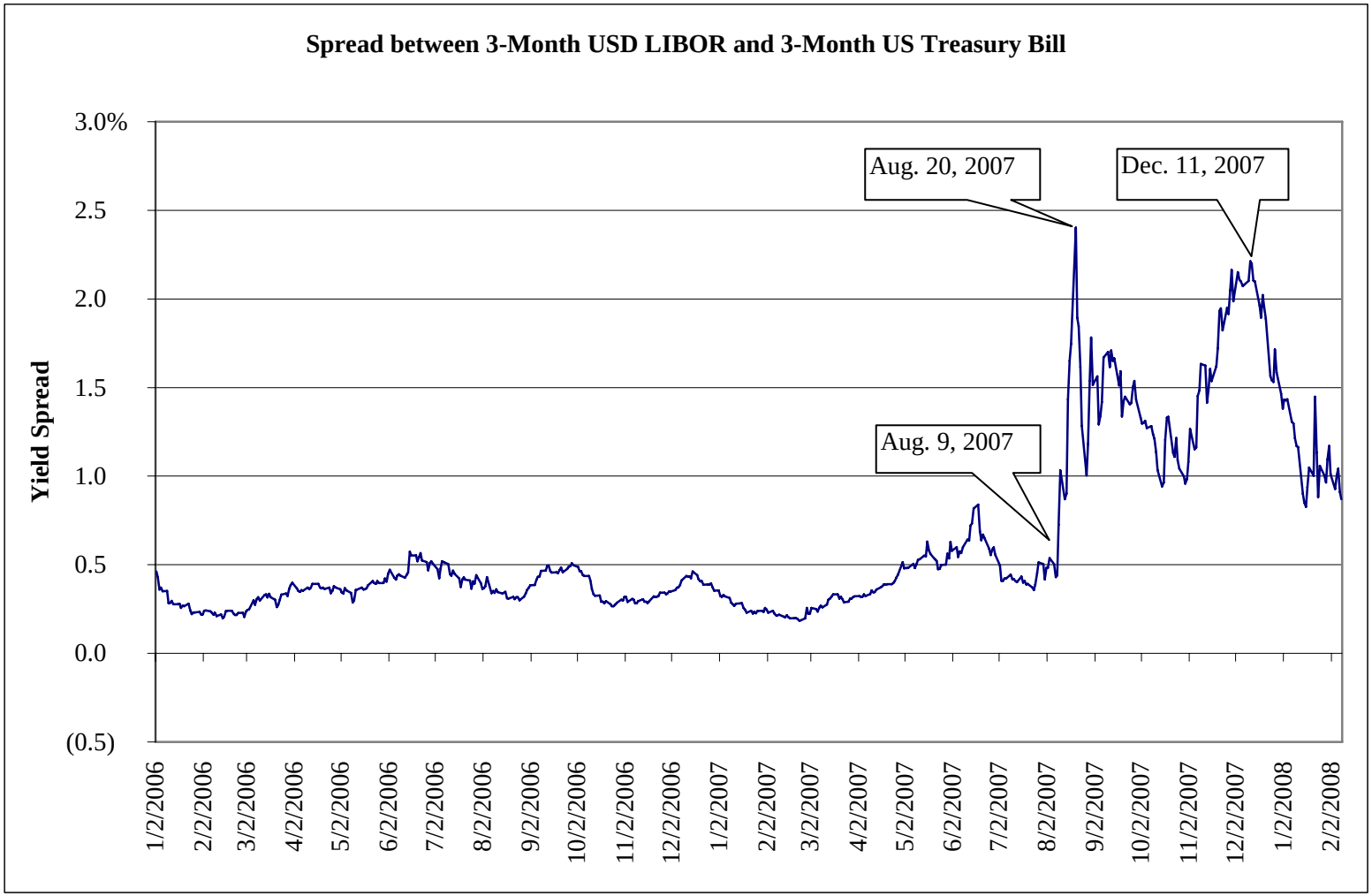


Figure 6. Panel E. Average % of Main Tranche Principal



Data Source: SDC Platinum.

Figure 7. LIBOR – Treasury Spread



Source: Federal Reserve Bank of Saint Louis and British Bankers' Association

Table 1. Summary of Securities Class Action Suits as of February 18, 2008

Firm	Date	Case	Cause of Action	Class Period
ACA CAPITAL HOLDINGS	1/11/08	Rose v. ACA Capital Holdings Inc.	10b-5/Section 11 & 12(a)(2)	11/2/06 - 11/20/07
	11/21/07	Blackmoss Investments Inc. v. ACA Capital Holdings, Inc.	Section 11 & 12(a)(2)	
ACCREDITED HOME LENDERS	6/25/07	Consolidated various actions against Accredited Home Lenders	10b-5/section 11 & 12(a)(2)	1/28/04 - 3/12/07
AMBAC FINANCIAL GROUP	2/7/08	Babic v. Ambac Financial Group	N/A	
	1/16/08	Reimer v. Ambac Financial Group	10b-5	10/19/05 - 11/26/07
AMER. HOME MORT. INVES.	7/31/07	Greenberg v. American Home Mortgage Investment	10b-5	7/26/06 - 7/27/07
BANKATLANTIC BANCORP	11/30/07	Ploss v. Bankatlantic Bancorp, Inc.	10b-5	11/9/05 - 10/25/07
	11/13/07	Alarm Specialties, Inc. v. Bankatlantic Bancorp, Inc.	10b-5	11/9/05 - 1/25/07
	10/29/07	Hubbard v. Bankatlantic Bancorp, Inc.	10b-5	11/9/05 - 1/25/07
BEAZER HOMES	4/30/07	Miller v. Beazer Homes	ERISA	12/31/05 - 3/29/07
	3/29/07	Kratz v. Beazer Homes	10b-5	7/27/06 - 3/27/07
CARE INVESTMENT TRUST	9/18/07	Briarwood Investments Inc. et al v. Care Investment Trust Inc.	Section 11	
CENTERLINE HOLDING	2/4/08	Weinrib v. Centerline Holding Company	N/A	
	1/31/08	Frank v. Centerline Holding Company	N/A	
	1/18/08	Goldstein v. Centerline Holding Company	10b-5	3/12/07 - 12/28/02
CITIGROUP	1/7/08	Public Employees' Retirement Association of Colorado vs. Citigroup	10b-5	1/2/04 - 11/21/07
	1/7/08	Fisher v. Citigroup	N/A	
	11/9/07	Hammerschlag v. Citigroup Inc.	10b-5	1/1/04 - 11/5/07
	11/8/07	Saltzman et al v. Citigroup Inc.	10b-5	4/17/06 - 11/2/07
	8/27/07	Marlin v. Citigroup Global Markets Inc.	Section 11 & 12(a)(2)	
	11/16/07	Rappold v. Citigroup	ERISA	1/1/07 - present
COAST FINANCIAL HOLDINGS	3/27/07	Ratcliff v. Coast Financial Holdings	10b-5	10/5/05 - 1/25/07

Firm	Date	Case	Cause of Action	Class Period
COUNTRYWIDE FIN. CORP.	1/16/08	Snyder v. Countrywide Financial Corporation	California State Law	
	12/14/07	Luther v. Countrywide Financial Corporation	N/A	
	11/16/07	Steele v. Countrywide Financial Corporation	N/A	
	11/5/07	Brahn v. Countrywide Financial Corporation	Section 11 & 12(a)(2)	
	11/28/07	Consolidated various actions against Countrywide		
	10/30/07	Argent Classic Convertible Arbitrage Fund v. Countrywide Financial Corp.	10b-5	5/17/07 - 8/9/07
	10/12/07	Saratoga Advantage Trust v. Countrywide Financial Corporation	10b-5	4/24/04 - 8/9/07
	8/14/07	Pappas v. Countrywide Financial Corporation	10b-5	10/24/06 - 8/9/07
	9/19/07	McBride v. Countrywide Financial Corporation	Section 11	
	8/31/07	Norfolk County Retirement System v. Countrywide Financial Corporation	10b-5	4/24/04 - 8/9/07
	8/20/07	Abrams v. Countrywide Financial Corporation	10b-5	1/31/06 - 8/9/07
ETRADE FINANCIAL	11/21/07	Ferenc v. Etrade Financial Corporation	10b-5	4/20/06 - 11/9/07
	11/16/07	Davidson v. Etrade Financial Corporation	10b-5	12/14/06 - 11/9/07
	10/12/07	Boston v. Etrade Financial Corporation	10b-5	12/14/06 - 9/25/07
	10/2/07	Freudenberg v. Etrade Financial Corporation	10b-5	12/14/06 - 9/25/07
FEDERAL HOME LOAN MORT	11/21/07	Reimer v. Federal Home Loan Mortgage Corporation	10b-5	8/1/06 - 11/19/07
FIRST HOME BUILDERS	10/19/07	Sewell v. First Home Builders	10b-5/Section 12(a)(2)	9/1/03 - 12/31/05
FREMONT GENERAL CORP	9/21/07	Mathews v. Fremont General Corporation	10b-5	5/9/06 - 2/27/07
	9/19/07	Miller v. Fremont General Corporation	10b-5	5/9/06 - 2/27/07
	9/4/07	Al-Beitawi v. Fremont General Corporation	10b-5	5/9/06 - 2/27/07
	6/15/07	D'Errico v. Rampino	10b-5	4/28/05 - 2/27/07
	4/24/07	McCoy v. Fremont General Corporation	ERISA	1/1/03 - present
	5/29/07	Sullivan v. Fremont General Corporation	ERISA	1/1/05 - present
	5/25/07	Salas v. Fremont General Corporation	ERISA	12/31/05 - present
	5/15/07	Johannesson v. Fremont General Corporation	ERISA	1/1/05 - present
	5/15/07	Anderson v. Fremont General Corporation	ERISA	5/9/06 - 3/5/07
HOMEBANC CORP	11/30/07	Kadel v. Homebanc Corp	10b-5/Section 11 & 12(a)(2)	3/7/06 - 8/3/07
	1/4/08	Harbour v. Flood	10b-5	9/26/05 - 8/3/07
	12/17/07	Clewley v. Flood	10b-5	9/26/05 - 8/3/07

Firm	Date	Case	Cause of Action	Class Period
HOVNANIAN ENTERPRISES	9/14/07	Mankofsky v. Sorsby	10b-5	12/8/05 - 8/13/07
HUNTINGTON BANC. INC.	1/18/08	Vecchio v. Huntington Bancshares Inc	10b-5	7/20/07 - 11/16/07
	12/19/07	Ellman v. Huntington Bancshares Inc.	10b-5	7/20/07 - 11/16/07
IMPAC MORTGAGE HOLD	10/3/07	Abrams v. Impac Mortgage Holdings Inc	10b-5	5/10/06 - 8/15/07
	8/17/07	Pittleman v. Impac Mortgage Holdings Inc.	10b-5	5/10/06 - 8/15/07
INDYMAC FINANCIAL INC.	3/8/07	Reese v. Indymac	10b-5	5/4/06 - 3/1/07
	9/7/07	Tripp v. Indymac	10b-5	1/26/06 - 1/25/07
LEVITT CORP.	1/25/08	Dance v. Levitt Corporation	10b-5	1/31/07 - 8/14/07
LUMINENT MORTGAGE CAP	9/11/07	Metzger v. Luminent Mortgage	10b-5	10/10/06 - 8/6/07
	10/8/07	Kaplowitz v. Luminent Mortgage	10b-5	3/16/07 - 8/6/07
	8/15/07	PEM Resources v. Luminent Mortgage	10b-5	10/10/06 - 8/6/07
	8/9/07	Rosenbaum v. Luminent Mortgage	10b-5	10/10/06 - 8/6/07
	8/8/07	Leone v. Moore	10b-5	7/24/07 - 8/6/07
MBIA	1/11/08	Schmalz v. MBIA Inc	10b-5	1/30/07 - 1/9/08
MCGRAW-HILL	8/17/07	Reese v. Bahash	10b-5	7/25/06 - 8/15/07
MERRILL LYNCH	12/28/07	Conn v. Merrill Lynch & Co.	Section 11 & 12(a)(2)	
	12/7/07	Garber v. Merrill Lynch & Co.	N/A	
	12/4/07	Kosseff v. Merrill Lynch & Co.	10b-5	11/3/06 - 11/2/07
	11/6/07	Savena v. Merrill Lynch & Co.	10b-5	2/26/07 - 11/2/07
	10/30/07	Life Enrichment Foundation v. Merrill Lynch & Co.	10b-5	2/26/07 - 10/23/07
	11/13/07	Estey v. Merrill Lynch	ERISA	2/26/07 - present
MOODY'S	9/21/07	Teamsters Local v. Moody's	10b-5	10/25/06 - 7/10/07
	7/19/07	Nach v. Huber	10b-5	10/25/06 - 7/10/07
MORGAN KEEGAN & CO	2/5/08	Hartman v. Morgan Keegan	Section 11 & 12(a)(2)	
	12/21/07	Willis v. Morgan Keegan	Section 11 & 12(a)(2)	
	12/6/07	Atkinson v. Morgan Keegan	Section 11 & 12(a)(2)	

Firm	Date	Case	Cause of Action	Class Period
MORGAN STANLEY	12/2/07	Siefkin v. Morgan Stanley	ERISA	8/9/06 - present
	1/18/08	Major v. Morgan Stanley	ERISA	12/1/05 - present
	12/28/07	Coulter v. Morgan Stanley	ERISA	1/1/07 - present
	2/12/08	McClure v. Lynch	10b-5	7/10/07 - 11/7/07
NATIONAL CITY CORP	1/24/08	Casey v. National City Corporation	10b-5	4/30/07 - 1/2/08
NETBANK INC	10/22/07	Vahdat v. Netbank, Inc. et al	10b-5	5/1/06 - 9/17/07
	9/19/07	Adcock v. Netbank, Inc. et al	10b-5	5/1/06 - 9/17/07
NEW CENTURY FINANCIAL	2/8/07	Gold v. New Century Financial	10b-5	5/04/06 - 2/7/07
	2/9/07	Abramcyk Real Estate v. New Century Financial	10b-5	5/04/06 - 2/7/07
	2/16/07	Benefield v. New Century Financial	10b-5	5/04/06 - 2/7/07
	2/12/07	Hammer v. New Century Financial	10b-5	4/7/06 - 2/7/07
	2/12/07	Meyer v. New Century Financial	10b-5	5/04/06 - 2/7/07
	2/12/07	Boyd v. New Century Financial	10b-5	5/04/06 - 2/7/07
	2/20/07	Mannella v. New Century Financial	10b-5	5/4/06 - 2/7/07
	2/22/07	Kumar v. New Century Financial	10b-5	5/4/06 - 2/7/07
	2/23/07	Anton v. New Century Financial	10b-5	4/7/06 - 2/7/07
	3/2/07	Wollman v. New Century Financial	10b-5	4/7/06 - 2/7/07
	3/6/07	Novotne v. New Century Financial	10b-5	4/7/06 - 3/2/07
	3/15/07	Johnson v. New Century Financial	Section 11 & 12(a)(2)	
	3/13/07	Winesburg v. New Century Financial	10b-5	4/7/06 - 3/2/07
	3/28/07	Gessford v. New Century Financial	10b-5	4/7/06 - 3/13/07
	2/9/07	Damore v. New Century Financial	10b-5	4/7/06 - 2/7/07
	2/9/07	Karcich v. New Century Financial	10b-5	4/7/06 - 2/7/07
	2/28/07	Brown v. New Century Financial	10b-5	4/7/06 - 2/7/07
	4/5/07	Kornfeld v. New Century Financial	Section 11 & 12(a)(2)	
	4/10/07	Kaufman Revocable Trust v. New Century Financial	Section 11	
	2/9/07	Wood v. New Century Financial	10b-5	5/4/06 - 2/7/07
NOVASTAR FINANCIAL	10/19/07	Novastar Financial Securities Litigation	10b-5	5/4/06 - 2/20/07
OPTEUM INC	10/9/07	Coy et al v. Opteum	10b-5/section 11 & 12(a)(2)	11/3/05 - 5/10/07
	9/17/07	Kornfeld v. Opteum	10b-5/section 11 & 12(a)(2)	11/3/05 - 5/10/07

Firm	Date	Case	Cause of Action	Class Period
RADIAN GROUP	9/11/07	Maslar v. Radian Group	10b-5	1/23/07-7/31/07
	8/15/07	Cortese v. Radian Group	10b-5	1/23/07 - 7/31/07
RAIT FINANCIAL TRUST	9/14/07	Smith v. RAIT Financial Trust	10b-5	1/10/07 - 7/31/07
	8/28/07	Charlotte H. Collums Living Trust v. RAIT Financial Trust	10b-5	1/10/07 - 7/31/07
	8/27/07	Jaroslawicz v. RAIT Financial Trust	10b-5	1/10/07 -7/31/07
	8/23/07	Borden v. RAIT Financial Trust	10b-5	1/1/07 - 7/31/07
	8/21/07	Reynolds v. RAIT Financial Trust	10b-5	6/8/06 - 7/3/07
	8/16/07	Salkowitz .v RAIT Financial Trust	10b-5/Section 11 & 12(a)(2)	5/13/06 - 7/31/07
	8/1/07	A1 Credit v. RAIT Financial Trust	10b-5/Section 11 & 12(a)(2)	1/10/07 - 7/31/07
SALLIE MAE	1/31/08	Burch v. SLM Corporation ("Sallie Mae")	10b-5	1/18/07-1/3/08
SECURITY CAP ASSUR	1/8/08	Clarke et al v. Security Capital Assurance Ltd.	10b-5 / section 11 & 12(a)(2)	4/23/07 - 12/10/07
	12/18/07	2 West, Inc. v. Security Capital Assuranc Ltd.	Section 11	
	12/7/07	Brickman Investments, Inc. et al v. Security Capital Assurance Ltd	Section 11 &12(a)(2)	
STATE STREET	12/7/07	Merrimack Mutual v. State Street	ERISA	1/1/07 - 10/5/07
	12/7/07	Unisystems v. State Street	ERISA	1/1/07 - 10/5/07
	10/24/07	Nashua v. State Street	ERISA	1/1/07 - present
TARRAGON CORPORATION	9/11/07	Judelson v. Tarragon	10b-5	1/5/05 - 8/9/07
THORNBURG MORTGAGE	10/9/07	Snydman v. Thornburg Mortgage	10b-5	10/6/05 - 8/20/07
	9/24/07	Sedlmyer v. Thornburg Mortgage	10b-5	10/6/05 - 8/17/07
	9/20/07	Smith v. Thornburg Mortgage	10b-5	4/19/07 - 8/14/07
	9/7/07	Gonsalves v. Thornburg Mortgage	10b-5	4/19/07 - 8/14/07
	8/21/07	Slater v. Thornburg Mortgage	10b-5	10/6/05 - 8/17/07
TOLL BROTHERS	4/16/07	Lowrey v. Toll Brothers	10b-5	12/9/04 - 11/8/05
UBS AG	1/29/08	Garber vs. UBS AG	10b-5	2/13/06 - 12/11/07
	12/11/07	Wesner v. UBS AG	10b-5	3/13/07 - 12/11/07

Firm	Date	Case	Cause of Action	Class Period
WASHINGTON MUTUAL	12/20/07	Garber v. Washington Mutual	10b-5	4/18/06 - 12/10/07
	11/5/07	Abrams et al v. Washington Mutual	10b-5	10/18/06 - 11/1/07
	11/5/07	Koesterer v. Washington Mutual	10b-5	7/19/06 - 10/31/07
	11/7/07	Nelson v. Washington Mutual	10b-5	4/18/06 - 11/1/07

Source: Complaints obtained from Bloomberg.

Table 2. MBS Underwriters in 2007 and Write-Offs Related to Subprime Loans

Rank	Book Runner	Number of Offerings	Market Share	Proceeds Amount + Overallotment Sold in US ($mill)	Announced Write-Offs ($mill)	Date
1	Lehman Brothers	120	10.8%	$100,109	$830	12/13/2007
2	Bear Stearns & Co., Inc.	128	9.9%	$91,696	$1,900	12/21/2007
3	Morgan Stanley	92	8.2%	$75,627	$1,300	9/20/2007
	Morgan Stanley				$9,400	12/19/2007
4	JP Morgan	95	7.9%	$73,214	$1,300	1/16/2007
	JP Morgan				$1,639	10/17/2007
5	Credit Suisse	109	7.5%	$69,503	$1,100	11/1/2007
6	Banc of America Securities LLC	101	6.8%	$62,776	$5,680	1/22/2007
7	Deutsche Bank AG	85	6.2%	$57,337	$3,170	10/31/2007
8	Royal Bank of Scotland Group	74	5.8%	$53,352	1.5 Billion Pounds	12/7/2007
9	Merrill Lynch	81	5.2%	$48,407	$7,900	10/24/2007
	Merrill Lynch				$14,600	1/17/2008
10	Goldman Sachs & Co	60	5.1%	$47,696	$0	
11	Citigroup	95	5.0%	$46,754	$1,830	11/5/2007
	Citigroup				$18,100	1/15/2008
12	UBS	74	4.3%	$39,832	$3,420	10/1/2007
	UBS				$10,000	12/10/2007
13	Washington Mutual Inc	28	3.7%	$34,430	$1,600	10/5/2007
	Washington Mutual Inc				$421	1/17/2008
14	Countrywide Securities Corp	72	3.6%	$33,705	$1,000	10/26/2007
15	Wachovia Corp	15	3.3%	$30,226	$1,100	11/9/2007
	Wachovia Corp				$3,000	1/22/2008
16	Barclays Capital	32	3.0%	$27,561	$2,700	11/15/2007
17	HSBC Holdings PLC	24	1.2%	$11,236	$3,400	11/14/2007
18	General Motors Corp	19	7.0%	$6,814	$0	
19	ABN AMRO	5	3.0%	$2,476	$0	
20	RBC Capital Markets	8	2.0%	$2,108	$360	11/13/2007

Table 3. Insurers of U.S. Mortgage-Related Issues, 2006–2007

	2006 Issuance ($mil)	Market Share (%)	2007 Issuance ($mil)	Market Share (%)
MBIA	9,250.4	18.9	10,694.7	28.3
Ambac	10,815.0	22.1	7,474.3	19.8
FSA	6,428.4	13.1	7,175.5	19.0
XL Capital	6,146.4	12.6	4,184.0	11.1
FGIC	14,278.7	29.2	3,984.3	10.5
Assured Guaranty	513.0	1.0	3,644.5	9.6
CIFG	1,473.1	3.0	651.9	1.7
Total Insured	48,905.0	100.0	37,809.2	100.0

Source: *Asset-Backed Weekly Update* (January 18, 2008)

Table 4. Underwriting Standards in Subprime Home-Purchase Loans, 2001-2006

	Low/No-Doc Share	Debt Payments/ Income	Loan/Value	ARM Share	Interest-Only Share
2001	28.5%	39.7%	84.0%	73.8%	0.0%
2002	38.6%	40.1%	84.4%	80.0%	2.3%
2003	42.8%	40.5%	86.1%	80.1%	8.6%
2004	45.2%	41.2%	84.9%	89.4%	27.2%
2005	50.7%	41.8%	83.2%	93.3%	37.8%
2006	50.8%	42.4%	83.4%	91.3%	22.8%

Source: Freddie Mac, obtained from the International Monetary Fund.

Table 5. Trustees for CDOs Issued Worldwide, 2006–2007

	2006 Issuance ($mil)	No. of Deals	Market Share (%)	2007 Issuance ($mil)	No. of Deals	Market Share (%)
LaSalle Bank (ABN Amro)	104,469.6	164	21.7	99,474.9	127	24.2
Bank of New York	66,162.5	155	13.8	96,562.5	162	23.5
Wells Fargo	61,997.5	77	12.9	61,613.6	88	15.0
Deutsche Bank	50,486.7	136	10.5	61,313.1	126	14.9
U.S. Bank	28,149.9	65	5.9	16,883.3	41	4.1
Citibank	2,986.1	6	0.6	10,590.7	19	2.6
HSBC Bank	6,367.1	30	1.3	7,328.4	33	1.8
Investors Bank & Trust	7,709.9	15	1.6	5,739.7	9	1.4
BNP Paribas	4,897.6	9	1.0	4,653.3	11	1.1
State Street	0.0	0	0.0	3,330.0	4	0.8
Titulizacion de Activos	0.0	0	0.0	3,108.4	2	0.8
Ernst & Young	1,147.5	2	0.2	2,728.1	1	0.7
Law Debenture Trust	7,525.6	43	1.6	1,809.5	12	0.4
Wilmington Trust	0.0	0	0.0	1,718.4	4	0.4
GestiCaixa	384.2	1	0.1	1,523.1	1	0.4
Europea de Titulizacion	0.0	0	0.0	1,194.8	1	0.3
Deloitte & Touche	642.4	2	0.1	921.8	2	0.2
First Commercial Bank	432.0	1	0.1	309.3	1	0.1
Capita IRG Trustees	316.7	1	0.1	303.5	1	0.1
Mizuho Trust & Banking	758.9	1	0.2	139.9	1	0.0
Bank of Nova Scotia	0.0	0	0.0	125.0	1	0.0
OTHERS	136,142.7	350	28.3	29,448.9	58	7.2
Total	480,576.9	1,058	100.0	410,820.2	705	100.0

Source: *Asset-Backed Weekly Update* (January 18, 2008)

Table 6. CDO Liquidations as of January 18, 2008

	Rated Amount ($mil)	Collateral Manager	Bookrunner
Liquidated			
Adams Square Funding	487.3	Credit Suisse	Credit Suisse
Liquidation notice			
TABS Ltd., 2007-7	2,314.6	Tricadia	UBS
Carina CDO	1,490.7	State Street	Deutsche Bank
TABS Ltd., 2006-5	1,477.0	Tricadia	UBS
Tricadia CDO, 2007-8	501.9	Tricadia	CIBC
Vertical ABS CDO, 2007-1	482.0	Vertical Capital	UBS
Notice of acceleration			
Pinnacle Point Funding, 2	4,583.5	BlackRock	Bank of America
Millstone CDO, 4	2,190.5	Church Tavern Advisors	Calyon
Markov CDO, 1	2,127.0	State Street	Barclays
Pampelonne CDO, 2	1,990.7	Vertical Capital	Barclays
Broderick CDO, 3	1,494.0	SCM Advisors	Merrill Lynch
Highridge ABS CDO, 1	1,492.0	ZS Structured Credit	Merrill Lynch
Jupiter High-Grade CDO, 5	1,490.5	Harding Advisory	Credit Suisse
Orion Ltd., 2006-2	1,485.0	NIBC	Calyon
Cetus ABS CDO, 2006-4	1,470.0	GSC Group	Citigroup
Pampelonne CDO, 1	1,241.5	Vertical Capital	Barclays
Sherwood ABS CDO, 3	985.0	Church Tavern Advisors	UBS
Sagittarius CDO	957.0	Structured Asset Investors	Wachovia
Diogenes CDO, 3	752.0	State Street	Deutsche Bank
GSC ABS CDO, 2006-4U	720.0	GSC Group	UBS
BFC Silverton CDO, 2006-1	720.0	Braddock Financial	Barclays
ACA ABS Ltd., 2006-2	708.0	ACA Securities	Bear Stearns
Ansley Park ABS CDO	603.7	Principal Asset Management	Bank of America, SunTrust
Tricadia CDO, 2006-7	502.7	Tricadia	Bank of America
Mystic Point CDO	490.5	Fortis Bank	Bank of America
Montrose Harbor CDO, 1	479.5	Vanderbilt Capital	Credit Suisse
Octans CDO, 3	280.0	Harding Advisory	Citigroup
MKP CBO Ltd., 6	28.5	MKP Capital	Credit Suisse

	Rated Amount ($mil)	Collateral Manager	Bookrunner
Event of default notice			
Kleros Preferred Funding, 6	2,985.0	Cohen & Co.	UBS
Armitage ABS CDO	2,974.0	Vanderbilt Capital	Citigroup
Kleros Preferred Funding, 4	1,986.9	Cohen & Co.	Merrill Lynch
Webster CDO, 1	1,532.0	Vanderbilt Capital	RBS Greenwich
Stack Ltd., 2007-1	1,500.0	TCW Asset Management	Citigroup
Aardvark ABS CDO, 2007-1	1,500.0	Harbourview Asset Management	Mizuho
McKinley Funding, 3	1,495.0	Vertical Capital	Credit Suisse
ACA ABS Ltd., 2007-1	1,482.0	ACA Securities	RBS Greenwich
Jupiter High-Grade CDO, 7	1,480.0	Harding Advisory	Citigroup
TABS Ltd., 2006-6	1,472.0	Tricadia	RBS Greenwich
Cetus ABS CDO, 2006-3	1,232.5	GSC Group	Calyon
Kleros Preferred Funding, 5	1,191.5	Cohen & Co.	WestLB
Class V Funding, 3	1,024.2	Credit Suisse	Citigroup
Lancer Funding, 2	1,021.0	ACA Securities	UBS
888 Tactical Fund	1,019.2	Harding Advisory	Citigroup
Brooklyn Structured Finance CDO	993.5	Deutsche Asset Management	UBS
Nordic Valley CDO, 2007-1	988.5	250 Capital	Bank of America
Hartshorne CDO, 1	966.1	ZAIS Group	UBS
Delphinus CDO, 2007-1	947.0	Delaware Investment	Mizuho
ACA ABS, 2007-2	748.6	ACA Securities	UBS
GSC ABS CDO, 2007-1R	723.0	GSC Group	RBS Greenwich
Rockbound CDO, 1	488.0	Brigadier Capital	UBS
Cherry Creek CDO, 2	482.5	Surge Capital	UBS
Fort Denison Funding	411.3	Basis Capital	Goldman Sachs
E*Trade ABS CDO, 6	402.0	E*Trade	UBS
Visage CDO PLC, 2	402.0	TCW Asset Management	Credit Suisse
Neptune CDO Ltd., 5	336.5	Chotin Group	Bear Stearns
Neo CDO, 1	288.0	Harding Advisory	Merrill Lynch
Kleros Preferred Funding, 3	198.6	Cohen & Co.	Merrill Lynch

Source: *Asset-Backed Weekly Update* (January 18, 2008) (underlying data from Standard & Poor, information unavailable from Moody's and Fitch)

Table 7. CDO Sponsors by Number of Defaults as of January 18, 2008

Collateral Manager	Defaulted Issuance ($mil)	No. of Deals
Cohen & Co.	6,361.9	4
Tricadia (Mariner Investment)	6,268.2	5
Vertical Capital	5,209.2	4
Vanderbilt (Pioneer Investments)	4,985.5	3
BlackRock	4,583.5	1
Harding Advisory	4,557.7	5
State Street Global	4,369.7	3
GSC Group	4,145.5	4
ACA Securities	3,959.6	4
Church Tavern Advisors	3,175.5	2

Source: *Asset-Backed Weekly Update* (January 18, 2008)

Table 8. Value at Risk, 2004-2007

Firms	2004 ($mil)	2005 ($mil)	2006 ($mil)	2007 ($mil)
Bank of America [a,d]	$44.1	$41.8	$41.3	---
Bear Stearns [b,c]	14.8	21.4	28.8	69.3
Citigroup [a,d]	116.0	93.0	106.0	---
Credit Suisse [a,d]	55.1	66.2	73.0	---
Deutsche Bank [a,d]	89.8	82.7	101.5	---
Goldman Sachs [b,d]	67.0	83.0	119.0	134.0
JP Morgan [a,d]	78.0	108.0	104.0	---
Lehman Brothers [b,d]	29.6	38.4	54.0	124.0
Merrill Lynch [b,d]	34.0	38.0	52.0	---
Morgan Stanley [b,c]	94.0	61.0	89.0	83.0
UBS [a,c]	103.4	124.7	132.8	---
Wachovia [a,d]	21.0	18.0	30.0	---

VaR statistics as reported in the 10K or 20F (in the case of foreign firms) of the respective firms. Note that firms use different assumptions in computing their Value at Risk. Some annual reports are not yet available for 2007.

[a] Represents a 99% confidence interval, one-day holding period.

[b] Represents a 95% confidence interval, one-day holding period.

[c] Aggregate (trading and non-trading portfolio) VaR.

[d] Trading portfolio VaR.